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**IF YOUR
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Well, that was a bit of a disappointment – I searched high and low for the M2 that I was pretty sure Santa was going to be leaving out for me but to no avail. I'd been really good all year and everything! Perhaps it was just a little too early to expect Father Christmas to have got his hands on one, production has only just started after all, and UK sales don't actually start until April so maybe I was jumping the gun a little. I'll just have to wait for Mrs H to come up with the goods for my birthday...

I have such high hopes for the M2 – I'm expecting it to be BMW's stand-out car of the year – but perhaps I'm guilty of building it up just a little too much? No one outside of BMW has driven one so it's very hard to know whether or not it will actually drive as well as the spec suggests, but I can't wait to find out. I know everyone has been hoping that one day BMW will make another machine in the mould of the E30 M3 and to me this machine really has that sort of feel about it. Yes, I know it's turbocharged, and yes, BMW could have probably made it lighter if it had stripped out some of the goodies, but today's buyer won't put up with a slightly thrashy four-pot that's light on torque, and wind up windows and no connectivity – I'm pretty sure that type of minimal equipment level would put loads of people off buying it. And no, it doesn't have the track-orientated focus of the E30, but remember there is the M235i race car that's visually very similar to the M2, and no doubt some of the experience BMW has picked up during a couple of season's racing with the M235i will have filtered down to the M2. Or at least, that's what I'm hoping.

The M2 won't be the only new car I'm expecting to make a debut this year as the F10 5 Series first made its appearance at the tail end of 2009... which means that a replacement is on the cards this year. The 5 Series always follows on shortly after the debut of a new Seven and often mirrors a certain amount of the range-topper's technology so I wouldn't be surprised if the next generation Five fairly closely apes the G11 7 Series in both looks and technology. Let's just hope the new car doesn't lose its sporting edge with the addition of too much of the Seven's technology.

We've a distinctly classic feel to this issue with plenty of features to whet the appetite and I make no apologies for putting the glorious Alpina C2 on the cover – it must rate as one of the best examples of an E30 I've ever driven, and trust me I've driven a few, dating back to my dealership days when they were new! Can't quite stretch to an Alpina like this one, but maybe a nice E30 325i would be a decent alternative to that M2 that's unlikely to be showing up outside my house anytime soon...

Bob Harper, Editor



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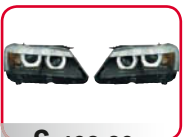
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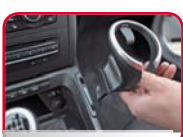
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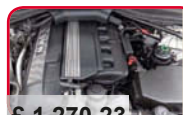
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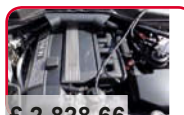
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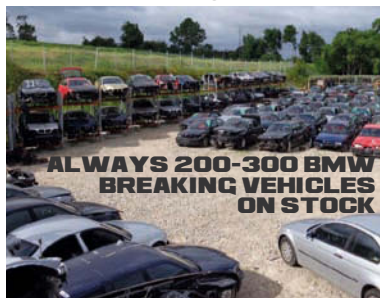
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ISSUE 260 FEBRUARY 2016



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- 010 New Products** A new book, power upgrades, suspension and much more.
- 014 Behind the Wheel** Two 18ds tested in Gran Coupé and Touring guises.
- 022 A Question of Sport** AC Schnitzer endows the Z4 with some serious diesel power with a 400hp conversion!
- 030 Power Ranger** We head off to Finland in search of a mighty X5M packing some serious horsepower.
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Andy Priaulx retires as Works driver

After 13 years as a BMW Works driver Andy Priaulx said a fond farewell to his BMW Motorsport family at the annual BMW Motorsport party, held at the end of each season. At an emotional awards ceremony he was awarded the BMW Sports Trophy Honorary Award in recognition of his hard work over the years.

Priaulx has left in search of a new challenge next year and is expected to announce details of precisely what this is in January. However, he is already certain of a place in the BMW Motorsport history books. In 2004 he won the European Touring Car Title and between 2005 and 2007, Priaulx won three titles in a row with BMW Team RBM in the FIA World Touring Car Championship – not bad when you consider that the Schnitzer team was very much the first choice Works outfit at the time. In 2005, he was also victorious at the Nürburgring 24 Hours in a M3 GTR. In total, he amassed more than 50 victories in BMW cars and in this year's BTCC he demonstrated that he hadn't lost his touch, winning two races, numerous podiums and two pole positions. He dovetailed his BTCC racing with five rounds of the European Le Mans Series, winning the season closing event in Estoril in one of the Z4 GTE's final outings.

"I have had the privilege of driving some of the best racing cars in the world, and have achieved fantastic success with them," commented Priaulx. "I will obviously always have particularly fond memories of my three world titles in the WTCC and victory at the Nürburgring 24 Hours. I had a great time here.

"Thanks to BMW, my dream has come true for the last 13 years. Although I am now heading off in search of a new challenge, I will never forget what I have achieved with BMW Motorsport. I cannot thank all the teams I have driven for enough. Not only were they all extremely professional, but it was also great fun to work with them every single time. At this point, I could list a lot of names of people who have helped me over the years, but I am sure I would still forget many. Because of this, I would just like to give a special mention to the Belgian BMW Team RBM, with whom I raced for a decade." We wish Andy every luck for the future – he will be sorely missed as a Works driver.



Above: AP receives his honorary award; WTCC at Silverstone; E90 320si and M3 GTR at the 'Ring



Right: A youthful Priaulx 13 years ago; Z4 in the US; DTM at Brands. Left: Celebrating his last BMW win at Estoril





Mixed Euro NCAP bag

In the latest round of safety tests two BMWs were tested – the all-new X1, and slightly oddly the Z4 which must be coming towards the end of its natural life cycle. Naturally enough it was the X1 which scored the better of the two machines, ending up with a five-star rating – the highest possible overall in Euro NCAP's rating system. Overall it scored 90 per cent for adult occupant protection, 87 per cent for child occupant

protection, 74 per cent for pedestrian safety and 77 per cent for its safety systems such as stability control and autonomous braking.

The older Z4 was only rated as a three-star vehicle scoring 69 per cent for adult protection, 61 per cent for children, an excellent 91 per cent for pedestrians but a lowly 49 per cent for safety assist functions, mainly as it lacks autonomous emergency braking, lane and speed assistance.



Two million and more

As we went to press at the tail end of 2015 BMW was celebrating another bumper year with the BMW Group's production network posting new record highs for the 2015 business year. Due to the high customer demand and the launch of numerous new models, such as the new BMW 7 Series, the international plant network has shown an excellent capacity utilisation – the two-millionth car rolled off the assembly lines back in November. And 2015 marks the fifth time in a row that the company's German plants have produced well over one million vehicles a year.



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Dr Ian Robertson, member of the BMW AG board of management responsible for sales and marketing BMW and sales channels BMW Group, said: "We are the first car manufacturer to offer a digital sales solution for the entire product range and the full end-to-end buying or leasing process online. Now, UK customers can do everything from

the comfort of their home. The integration of the BMW Genius via live chat and retailer messaging functions, where the customer is able to get personalised support in real time, makes this system unique and a new benchmark for the automotive industry."

The aim of BMW Retail Online is to offer the dealer more channels and opportunities to get in touch with potential customers and to adapt to changing purchasing behaviour and technology awareness. Though the buying process can be done entirely online, the dealer remains at the heart of the process and is in control of the sale. Furthermore, many customers appreciate the availability of personal, human advice at points along the way. Multi-channel chat options

(webchat, phone or email) mirror the in-showroom BMW Genius experience, offered from 8am-10pm.

Before being rolled out nationally, BMW Retail Online was trialled with nine UK retailers and proved such a success that 95 per cent of BMW UK retailers will offer this service to their customers.

News of this announcement coincides with general purchasing trends for all types of goods increasingly moving to the web. Online global commerce is expected to reach US\$ 2.5 trillion by 2020. This trend is reflected in the car industry, with 97 per cent of buyers researching their car purchase online and customers now visiting a retailer on average just 1.4 times before completing their purchase. This compares to an average of four visits per purchase in 1998.



Schnitzer's Essen-tial delights

AC Schnitzer has supported the Essen tuning show for a long time and generally brings something wild to the party – and this year was no exception. True, its grey 1 Series hatch might not have looked like a show stopper, but if you looked closer it was right up there with its more extreme machinery. Under the hatch's bonnet Schnitzer has managed to shoehorn in the triple-turbo diesel from the M50d and once this 3.0-litre diesel has been breathed on by Schnitzer's techs it develops a healthy 400hp at 4000rpm and a monstrous 590lb ft of torque at 2500rpm. That makes it good for a 0-62mph time of 4.5 seconds and a 80-180km/h (50-112mph) time of just 7.9 seconds – that really is quick!

Obviously this headline-grabbing machine was there for a reason, and that was to promote

Schnitzer's array of styling, suspension and engine modifications for the face-lifted 1 Series which are available for both the SE and M Sport machinery.

Schnitzer didn't stop at the 1 Series, though, as it also had the face-lifted LCI 3 Series on display and while the changes for the serial production car might not have been radical, Schnitzer has developed a new range of parts to suit the subtly altered Three. As you'd expect there's a new range of styling parts, many of which can be ordered in carbon as well as moulded polyurethane.

Power upgrades are available for virtually all models, with only the new 340i and 330i still in development, and some models see some pretty impressive gains – such as the 316i which has been boosted from 136hp to 204hp, and the 320i

which now offers 245hp, up from 184hp. There's a choice of either racing suspension (height adjustable, bump and rebound adjustable, 30-40mm lower), sports suspension (with 25-30mm lowering) and a spring kit too. As you'd expect there is also a full wheel programme with alloys ranging from 18-21-inches in diameter.

Last, but by no means least, was the Schnitzer Falcon, based on the X6. This wide-bodied bruiser won't be to everyone's taste, but there's no doubting its road presence. Power outputs vary depending on engine, but Schnitzer has upgrades ranging from a 309hp 30d to 650hp for the X6M.

If you're interested in the official AC Schnitzer program then check out www.ac-schnitzer.co.uk or if you're outside the UK, www.ac-schnitzer.de.



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Schmiermann N54 and N63 turbo upgrades

Developed in collaboration with Turbo DK, these new turbo kits from Schmiermann are designed to take your BMW's performance to the next level. The N54 turbos (for 35i models) feature a 42/60mm CNC-milled 'charger wheel, a 41/47 turbine axle, an upgraded wastegate bush to eliminate wastegate rattle, upgraded bearings, and are rated to 550hp.

The N63 turbos (for 50i models) feature a 48/68mm CNC-milled 'charger wheel, a bigger turbine axle, an upgraded wastegate bush, upgraded bearings, and are rated to 800hp. Both turbo kits offer 100 per cent OEM installation.

Price: N54: £1904.07; N63: £2385.07

Contact: www.schmiermann.co.uk



AWE Tuning F10 M5 exhaust

F10 M5 owners looking for a more suitable soundtrack should check out the new Touring Edition exhaust from AWE. The axle-back system uses the company's proprietary 180 Technology to deliver what it reckons to be a drone-free V8 soundtrack. Made from three-inch T304 stainless steel and with laser cut fixtures for perfect fitment, AWE says its exhaust delivers peak gains of 12hp and 26lb ft of torque, and is available with either chrome or diamond black tips.

Price: From £1700

Contact: www.awe-tuning.com





116i Samco coolant kit

New from Samco this month comes a coolant hose kit for the 116i for 2003-2007 models. Handmade in the UK and available in 19 different colour options the 100 per cent silicone hose kit not only looks good but is built to last and is perfect for anyone looking to replace their standard hoses and brighten up their engine bay at the same time.

Price: Hose kit £151.70, clip kit £30.62

Contact: 01443 238464 or www.samcosport.com

Ground Control F8x M3/M4 coilover conversion kit

This kit has been designed to work with your M3 or M4's OE Adaptive M suspension and allows you to lower your car by up to 40mm without losing the adjustable damping function. The kit uses Eibach springs with adjusters made from anodised aluminium and comprises a threaded sleeve and

adjustable spring seats. The kit includes everything you need to convert all four corners, including adjustable front camber/caster plates, adjustable front anti-roll bar links and front and rear bumpstops.

Price: £1159

Contact: www.ca-int.co.uk or 01202 822 792



OAL-BB 50: The Alpina Book

This is certainly one of the most fascinating tomes to have landed on our door mat in recent years and charts the history of 50 years of Alpina.

For half a century, Buchloe has been the place where experts create automobiles for connoisseurs. The name Alpina not only stands for performance, individuality and craftsmanship, it is also synonymous with a family business' unique success story. All this and more is described in great detail in this company chronicle titled *OAL-BB 50 – The Alpina Book*.

In its 464 pages, this bible for all Alpina enthusiasts, owners and fans, is dedicated to all facets of the company including its inception, its legendary successes in motorsports in the 1970s, its creation of the world's fastest saloons and even the latest product developments. More than 200 photographs, some of which have never been published before, are featured in this opulent coffee-table book.

Written in both German and English, the author Paolo Tumminelli, Professor at the Cologne International School of Design, outlines the evolution of the company and its automobiles. With in-depth knowledge, backed by materials from the Alpina archives, he tells anecdotes in detail while never losing sight of the great vision of the company's founder, Burkard Bovensiepen, and the continuation of his lifetime achievements by his sons.

Overall we rate it very highly, not only for its unique insights into the company but also for the photography – it's great to see so many previously unseen images in a book when far too many publishers just rely on the same old press shots in books these days. Highly recommended.

Price: RRP £69.99

ISBN: 978-3-667-10312-3

Contact: www.alpina-automobiles.com or all good book stores

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Goodridge F22 2 Series brake line kits

Goodridge has developed a new Phantom braided stainless steel brake line kit for selected F22 2 Series Coupé models (220i, 220d and M235i). The company reckons the kit offers superior resistance to abrasion and corrosion, unrivalled braking efficiency through greater reliability, and a complete absence of sponginess through the brake pedal irrespective of how hard the brake fluid is worked. The kits are available in a choice of ten different colours, too.

Goodridge says its kits are designed and manufactured with plenty of attention to detail – no universal fittings are employed in the Phantom stainless steel braided brake line kits and all components are designed and manufactured to suit individual applications. Every brake line is pressure tested after assembly so that customers can have absolute confidence in its functioning.

Price: £79.80 RRP (inc. VAT)

Contact: www.goodridge.com.



E93 M3 Eibach Pro-Kit

Responding to increased demand, Eibach UK has taken delivery of a limited number of Pro-Kits for the E93 M3. This popular uprated performance spring kit offers lowering of 25mm front and 15mm rear, making your M3 Cabrio look and handle better. These progressively wound springs are computer matched to work with the OEM dampers to help maintain ride quality and performance. The Pro-Kit comes with full TÜV approval and a five-year warranty as standard.

Price: £210.99

Contact: 01455 285851 or www.eibach.com



AmD Tuning Package for M4 Coupé

The latest tuning package to emerge from AmD is a combination of a software remap for the M4 and a Milltek performance exhaust system. Milltek says its exhaust provides the M4 with improved performance and an excellent accompanying soundtrack – nicely bassy at low revs, nice howl at higher revs – and also reckons it eliminates an annoying drone in the 2300-2800rpm band.

AmD says that when combined with its software remap the new system really comes into its own and the combination creates more power

than just the sum of the gains achieved by the exhaust and software added together.

AmD Tuning is offering free fitting on all Milltek exhausts or, if you prefer to buy by mail order and fit it yourself, AmD will offer 10 per cent off the price and free delivery, too. Furthermore, if you buy an AmD Tuning performance remap at the same time as a Milltek exhaust you can have the remap at half the usual retail price!

Price: POA

Contact: www.amdtuning.com or 01708 861827



ER F8x M3/M4 charge pipe kit

Available from CA Automotive is this Evolution Racewerks charge pipe kit for the S55 twin-turbo engine. Available in either a polished or black anodised finish with smooth bends for minimal obstruction, this kit is designed to improve throttle response and decrease turbo lag, making it a useful addition to your M3 or M4.

Price: £578.28 polished, £607.71 black anodised

Contact: www.ca-int.co.uk or 01202 822 792

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Basic Luxury

Can the sumptuous specification of the 4 Series Gran Coupé Luxury work with the entry-level diesel engine?

Words: Shane O'Donoghue Photography: Dave Humphreys





Back in the year 2000, a fresh-faced Jenson Button was stopped and fined the equivalent of £500 for doing over 140mph on a French motorway. It was the best bit of publicity BMW ever received, as Button was at the wheel of a 330d Saloon (as part of his BMW-Williams contract) and the 'incident' was widely reported, making diesel cars a lot more interesting. In the intervening years we've seen the fuel come to dominate the UK market due in part to taxation based on carbon dioxide emissions and also because, well, diesel cars have improved immensely. BMW has always been at the forefront of diesel technology and thanks to the well-timed introduction of its suite of 'EfficientDynamics' measures, it still leads the way in terms of emissions and fuel economy. So much so that, M cars aside, we now almost do a double-take when we come across a brand-new BMW powered by a petrol engine.

That extends beyond the mass-market cars like the 3 Series and 5 Series – and all five SUV models – and includes the coupés, from the 2 Series to the 6 Series, plus, of course, the 'four-door coupés' such as the 4 Series Gran Coupé tested here. Nobody will blink an eye at the idea of a diesel engine in this model, but it'd be interesting to see how many buyers of the 418d version choose the 'badge delete' option when ordering... It represents the entry-level diesel variant, costing from £31,695 – as opposed to

£30,125 for the cheapest petrol model, the 420i.

And it could be a shrewd purchase for buyers that are more concerned with show than go, choosing the 418d over, say, the 420d, and spending the money saved on a higher trim level. They share the same basic 2.0-litre turbodiesel four-cylinder engine as ever (improved upon last year), the 418d putting out 150hp and 236 lb ft of torque to the 420d's 190hp and 295lb ft. Those are appreciable differences when you pit the two cars back-to-back, but in isolation the 418d hardly feels slovenly – and its maximum torque is produced lower down the rev range too, at 1500rpm. Admittedly, a 0-62mph time of 8.9 seconds is nothing to write home about, but the 418d retains a lovely effortless mid-range that typifies any modern diesel BMW.

For clarification, that 8.9-second time is for the automatic version (the manual records a slightly faster time in the none-too-mechanically sympathetic hands of BMW's professional test drivers), and though the eight-speed transmission adds a not insignificant £1550 to the purchase price, it'll be easier to sell on later and will retain its value better. On top of all that, it turns out to really suit this engine's power delivery. We've done lots of lyrical waxing on the talents of this gearbox already, but it's always worth repeating: it's a gem, whether you slot it into Sport mode and get a move on or leave it to its own default calibration map, where it remains smooth and chases as high a gear



The 4 Series Gran Coupé might share the same wheelbase as the two-door Coupé but it looks like a much bigger car



as is feasible to maximise economy, quelling engine noise in the process.

In truth, this hints at the type of person the 418d Gran Coupé might suit. It's at its best when lolling along the motorway racking up the mileage with some calming tunes gently emanating from the decent sound system and average economy of well over 50mpg. In this guise, the suspension is well-judged, keeping a firm control on unwanted body movements, but not at the expense of comfort. On the open road, keener drivers will enjoy the typical rear-drive balance and uncorrupted steering, but this model gives up a little sharpness in return for that comfort. The engine noise, a little too loud around town and at idle, melts away into the background, and you can sit back and enjoy the envious stares from the passing traffic. And there will be some, as the Gran Coupé is a cracking-looking thing that grabs your attention when in the right specification.

Of course, to maximise those covetous glances you'll need to spend the money you saved with your engine choice on a higher equipment grade. A sum of £3000 spans the four grades, from SE through Sport, Luxury and M Sport. If you're buying through PCP it probably won't make a massive difference to your monthly payments, so you choose based on

preference. M Sport is the most aggressive looking and Luxury is the classiest. The latter includes tasteful 18-inch alloy wheels and chrome detailing on the outside, which pair particularly well with a dark metallic paint finish.

A year and a half after its launch, it's still difficult to believe that the Gran Coupé is built on the same 2810mm wheelbase as the two-door 4 Series Coupé. Not only does it feature an extra pair of doors, but it physically looks much bigger. It's a trick of the designer's pen though (and a longer roof), and you shouldn't expect the rear seats to be as capacious as those in a 3 Series Saloon, but the boot is, at 480 litres – and it's easier to access thanks to the electrically opening hatchback. Occupants of the rear seats will be distracted from the lack of stretching room by the inclusion of frameless doors all-round and a well-appointed cabin within. The Luxury package includes a few extra no-cost leather options, in classy Saddle brown or Venetian beige, with 'Exclusive' stitching, adding no end to the ambience.

Sixteen years after Jensen was slapped with that fine, there's no doubt he has matured. The 4 Series Gran Coupé in this 418d Luxury guise could well be for the grown-up Buttons of the world. It'll still do 132mph you know... ●

F36 418d Luxury Gran Coupé Auto	
ENGINE:	Four-cylinder, turbodiesel
CAPACITY:	1995cc
MAX POWER:	150hp @ 4000rpm
MAX TORQUE:	236lb ft @1500-3000rpm
0-62MPH:	8.9 seconds
TOP SPEED:	132mph
ECONOMY:	64.2mpg
EMISSIONS:	116g/km
PRICE:	£35,745



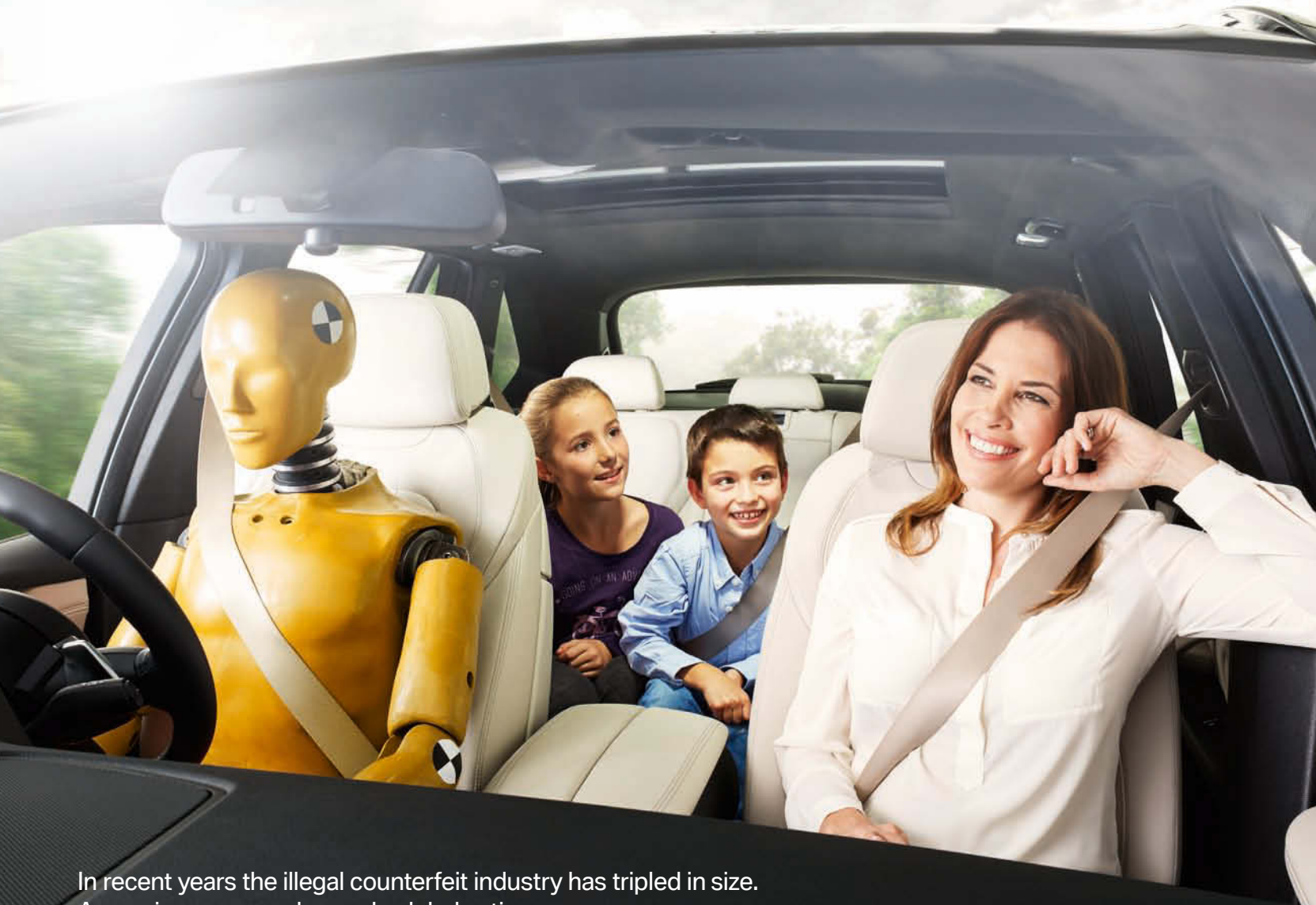
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Touring *in style*



We've always liked the Touring models but what do we make of the 318d version in Luxury spec?

Words: Shane O'Donoghue Photography: Max Earey

All car makers partake in the mid-life refresh way of doing things. It's quite understandable why: if a model is to remain in production for any meaningful length of time then it is likely to span a few buying cycles of the typical owner, especially those spending company money or on a leasing or finance plan. We humans like change, but not too much change, and that, it seems, extends to our cars. The manufacturers know this (they've no doubt spent millions paying highly qualified consultants to tell them so), which is why they subtly update their models every few years, making them not so different as to scare away existing owners, but enhanced enough to give those same people reason to want to change up.

So it is with the evergreen 3 Series. BMW calls its mid-life update 'LCI', standing for Life Cycle Impulse, and though we reported on the 340i when we attended the international launch of the LCI 3 Series back in the September 2015 issue this is our first chance to drive a 318d version. This Luxury Touring, fitted with the eight-speed automatic, is hardly bargain basement BMW buying, with a £34,035 sticker price, but it is one that should appeal to those spending their own money on a 3 Series Touring. I.e. those that won't be obsessing over every gram of carbon dioxide and the resultant benefit-in-kind taxation – and inevitably opting for the 320d EfficientDynamics Plus.

Not that the 318d is exactly profligate. This automatic version is officially the most efficient, emitting 119g/km and returning 62.8mpg on the combined cycle. An average driver should see the right side of 50mpg without too much effort as well, especially if they make full use of the Eco Pro mode in the driving settings and heed the efficiency tips popping up in the dashboard. Naturally they'll need to stay away from Sport mode, but our feeling is that those that go for the 418d over the 420d will be less inclined to experiment with those settings in any case.

And they should also be perfectly happy with the tweaked suspension. BMW talks about increased stiffness in the system, from the body shell fixings to the dampers to the steering mounting, but what that has seemingly enabled is a softening of the suspension itself, adding more comfort into the mix. That's obvious even on the lovely 18-inch alloys that come as standard with the Luxury specification, though unquestionably this model's dynamics have been refocused on comfort and stability.

Whisper it, but there's even some stabilising understeer built into the chassis. Enter a corner with a little too much speed and the front tyres gently edge wide of the mark, hinting that you may want to slow down a tad. Only after that does the age-old 3 Series neutral balance come to the fore. Of more importance for the mass market, the sometimes twitchy nature of a rear-drive chassis that is evident in



F31 318d Luxury Touring Auto

ENGINE: Four-cylinder, turbodiesel
CAPACITY: 1995cc
MAX POWER: 150hp @ 4000rpm
MAX TORQUE: 236lb ft @1500-3000rpm
0-62MPH: 8.8 seconds
TOP SPEED: 130mph
ECONOMY: 62.8mpg
EMISSIONS: 119g/km
PRICE (OTR): £34,035



low-grip conditions has been cleverly dealt with. The 318d still carries as much speed as before, but that's now available even to those that only have a vague sense of which end power is sent to. The DSC stability system is quicker acting than ever, but also, crucially, unobtrusive with it, allowing keener drivers to maximise the available grip while giving everyone else the confidence to push on feeling safe and secure.

As ever, we'd recommend the automatic gearbox for your diesel-fuelled 3 Series Touring, but not only because it's the sensible option in terms of resale value and efficiency. The eight-speed unit was already a polished piece of kit, but with the LCI, BMW launched an updated transmission. Thankfully it shifts with all the smoothness it did and it allows the driver to choose modes depending on the situation and their mood – as before. The modifications centred on improvements in efficiency. Reduced torque converter slip and a wider spread of ratios help contribute to a claimed three per cent reduction in carbon dioxide

emissions from the gearbox alone. The automatic model better its manual sibling on that regard, 119g/km playing 122g/km. That won't really affect private buyers, but it's a one per cent difference in benefit-in-kind.

The automatic gearbox shifter is also more tactile to hold than the manual one and better suits the luxurious cabin with its Dakota leather and 'exclusive stitching'. In fairness, it does feel a step up from the SE and Sport model in that regard and if you look closely there are loads of little detail enhancements to make sure you agree that the Luxury version is worth the premium. Chrome trim can be found surrounding the air conditioning and stereo control areas, while ambient lighting is included in the package as well. A 'Sport' multi-function leather steering wheel is present too, but we're less impressed with this item. The leather is hard to the touch and the boss is oversized.

Obviously the front seats are where you'll want to be, but those in the back won't complain too much

(so long as they're not in the middle, battling with the tall transmission tunnel), and of course you buy a Touring because you reckon you need a lot of luggage space. The 3 Series Touring's boot measures from 495 litres to a maximum of 1500 litres with the rear seats folded. The minimum is only 15 litres more than a 3 Series Saloon's boot, but of course much more can be fitted in above the window line if needs be. On top of that, it's far easier to access the luggage in the estate, plus the glass in the rear hatch opens independently for when you want to quickly drop something in.

This variant of the 3 Series Touring won't be for everyone. Its price encroaches on the bottom of the 5 Series Touring line-up, for example, as it does on the X3 – while others may be happy to technically trade down to a high specification X1 for the SUV status. But those that get the whole 3 Series estate thing and are ready to upgrade their three-year-old example will be very happy indeed with the new model ●



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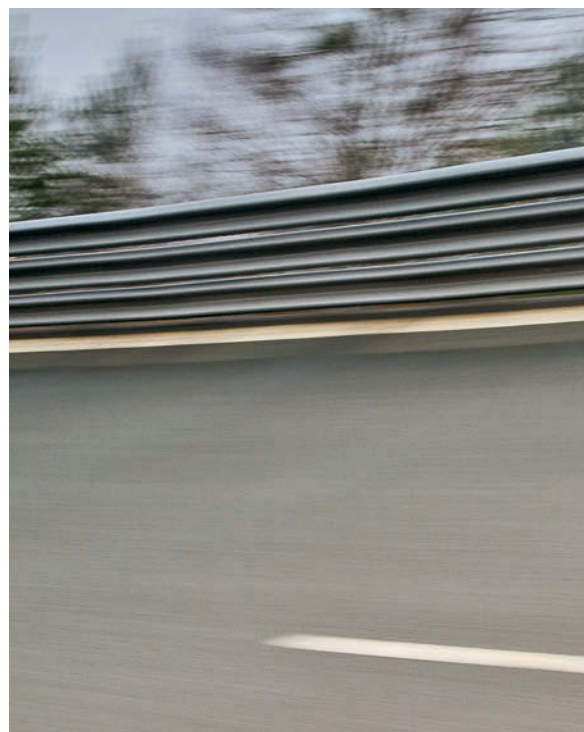


A Question of Sport

A pure sports car with a triple-turbo diesel under the bonnet? Who'd make such a thing? AC Schnitzer – that's who. And it knows what it's doing...

Words: Auto Bild Sportscars

Photography: Auto Bild Sportscars and AC Schnitzer



The ACZ4 5.0d has a bespoke interior and many one-off components such as the exhaust which saves a staggering 19kg



Some of our readers may well remember the AC Schnitzer 99d that the company built back in 2011 which combined BMW's ubiquitous 2.0-litre diesel engine tuned to 190hp and 310lb ft of torque with the expensively lightened body of a Z4. Thanks to innumerable carbon components, the eco-sportscar was able to slim down to an unladen weight of around 1300kg. It ran on low rolling resistance tyres and returned, on average, a smidgen over 74mpg which equates to a CO₂ emissions figures of just 99 grams per kilometre. Sadly this technology platform – costing €149,000, but not for sale – remained a highly regarded one-off.

It was also regarded – or rather, watched – by a stubborn interested party who was inspired by the concept of a diesel sports car for rather less noble reasons than saving the planet. For him, it was more about torque. The 310lb ft offered by the four-cylinder diesel wasn't enough for this customer, so he said to Schnitzer: "If you can make a really powerful diesel, I'll buy the car."

So the engine arrived – a freshly donated unit from a M550d. And in a lengthy operation, the AC Schnitzer 99d was transformed into the ACZ4 5.0d. The name is as unwieldy as it is misleading, because the triple-turbo six-cylinder doesn't have a 5.0-litre capacity – it

is, in fact, a 3.0-litre unit. That's more than enough, though, because straight from the factory this wonder diesel delivers no less than 381hp and 549lb ft of torque and turns the two-ton-plus M550d into a very lively performer.

But what can this oil-burner add to a lightweight Z4, even when on top of everything it's tuned by software intervention – an increase in injection quantity and, consequently, a rise in boost pressure – to 430hp and 620lb ft? And it gets better: our performance measurement actually recorded 445hp. Will the engine and chassis separate themselves from the bodywork during the traffic light grand prix? Will the propshaft tie itself in knots? Or will the rear wheels simply spin helplessly in every gear?

Somewhat surprisingly none of that happens as Schnitzer transplanted the complete rear axle from the E92 M3 (including the limited-slip diff) and fitted 9.5-inch wide forged alloy rims shod in very grippy 265 Michelins. As a result the Z4 actually transmits all that power and torque to the Tarmac remarkably well. Naturally it is possible, with the driving aids turned off, to transform the rear tyres into small black crumbs with a large dose of the throttle. However, anyone with even a hint of feeling in their right foot should be able to get smoothly off the mark (even in the wet), and rapidly shift up through second and third, and

only fully press depress the throttle in fourth gear at the earliest.

The secret of the fundamentally fine controllability and high output of the BMW diesel lies in the complex valve control of the three turbos: a small high-pressure turbo ensures spontaneous response to even the smallest tap on the gas pedal. From around 1500rpm, the large low-pressure turbo joins in and provides plenty of volume and torque. Stage three comes in at around 2700rpm: a bypass line now supplies exhaust gas to a third small high-pressure turbo. From here up to maximum revs at 5400rpm, all three turbos work together to push the huge air masses into the combustion chambers for maximum power. Yet the driver notices nothing of these processes, simply enjoying the lag-free, harmonious but extreme power development up to maximum revs. So on the motorway, eighth gear is enough for all situations. Hectic flips of the shift paddles, kickdown, high revs – why bother? Just engage top gear in manual mode and press the throttle – and enjoy acceleration to a level not experienced before. The speedo needle climbs from 100 to 200km/h (62-124mph) as quickly as it does from zero to 100km/h in other well-powered cars.

The vehement thrust however ends unexpectedly early at a measured 279km/h (173mph). Is this down



We're left with an impression of a machine that really does stir one's emotions. Emotions? In a diesel?

to the short-ratio M3 rear axle, which was really intended for a high-revving V8 petrol engine? No, because at top speed in eighth gear you're only at 4300rpm and the diesel has enough breath for a further 1100 revs. Roman Fenners of AC Schnitzer thinks the cause lies in a protective function of the gearbox software, to prevent overheating.

But even 279km/h feels very, very fast in the diesel Z4: the solid hard-top of carbon fibre reinforced plastic, which replaces the standard steel folding top and its complex electro-hydraulic folding mechanism, saving 56kg, produces a noticeable interior noise level. And the very low race-style suspension setup with short spring travel, pronounced negative camber and very wide tyres on the front axle, calls for strong arms on bumpy and grooved surfaces.

When we head off to the track, and specifically the slalom test, what was a disadvantage on the motorway here transforms into an advantage: the slightly nervous agility of the Schnitzer Z4. The pleasantly heavy steering, which feels beautifully taut and extremely precise, gives excellent feedback from the road and allows the coupé to be steered through the cones with millimetric precision. Understeer? Only when the tyres haven't warmed up. Oversteer? Only when the throttle is used as an on/off switch.

The nose-heaviness is successfully countered by AC Schnitzer with 265 tyres on the front too – instead of the mixed tyres with considerably narrower format on the front which come on the standard Z4 top model,

the sDrive35is. That car, with 340hp, weighs in at 1601kg – 123kg more than the Schnitzer with the heavy diesel unit up front. As well as the solid hard top of carbon fibre reinforced plastic there's also a CFRP bootlid (minus 34kg), a lightweight rear silencer (minus 19kg), CFRP bucket seats (minus 35kg) and forged alloys (minus 25kg) which all save weight.

Our race ace, Guide Naumann, now takes over the controls for our hot laps of the Sachsenring to record a lap time. For this we fitted Michelin Cup 1 semi-slicks which in the cool autumn temperatures, despite several warm-up laps, never quite reach their optimum working temperature. But the Schnitzer still steers excellently into the Coca-Cola Kurve after the start-finish straight without understeer. The suspension is perfectly set up for the Grand Prix circuit, handling the alternating corners without too much body roll, but was still soft enough to swallow the small bumps of the Sachsenring. For the Nürburgring North Loop we reckon this setup would, however, offer too little spring travel.

When accelerating out of corners, the triple-turbo has too much power especially in conjunction with an only lightly loaded rear axle. If you press the gas on entry to the apex, the rear kicks out suddenly, so you take it in one gear higher than usual, applying the gas late and progressively. But the rear still calls for your full attention, such as in the fast right kink downhill at 180km/h, where it tries to overtake the front! With the diesel roaring loudly at race speed, you can't hear the

rev limiter so you can't shift based on engine note. Instead you have to keep glancing away from the track and over to the rev counter. The needle, however, should never drift above 4500rpm because higher revs would only cost time and you've still got all that solid torque available in the next gear.

The Schnitzer braking system, with six-pots on the front, remains unmoved lap after lap – no fading, no lengthening pedal travel, just a pressure point set in stone, combined with perfect controllability.

Naumann's summed up the ACZ4 5.0d on track thus: "Race-style suspension with very high and correspondingly narrow limit zone. Overall high grip level but the huge torque proves a killer for perfect lines. With a slightly higher exterior temperature or a softer tyre compound, certainly another second could have been squeezed out."

The comparison with the Schnitzer Z4 99d mentioned initially, which we thrashed around the Sachsenring in spring 2013, is interesting: the 200kg lighter car, which also had 255 less hp, took over five seconds longer. A good time in itself, on a par with a current Audi S4 with 333hp. Or expressed in other words: the six-cylinder diesel is a real powerhouse. For the record the ACZ4 5.0d recorded a time of 1:37.27 on a cold track... a F82 M4 DCT Coupé managed a 1:37.74 under warmer conditions. And that makes the ACZ4 5.0d the fastest diesel we've ever driven around the Sachsenring.

And how does the Schnitzer feel in comparison





Track tester's notes

Engine: Because of its nature, it doesn't rev as sharply as a sporting, normally aspirated petrol engine. The strong torque always leads to a lightning-fast breakaway of the rear end.

Gearbox: Take everything one gear higher than normal, and shift up at 4500 rpm.

Steering: Direct, precise, plenty of feedback.

Suspension: Perfectly set up for the Sachsenring, almost no roll tendency in alternating curves, just enough spring travel for small bumps. 1.34g transverse acceleration!

Brakes: Perfectly controllable, no fading, pressure point clear as glass. Brilliant.

Schnitzer has stripped a huge amount of weight from the Z4 thanks to the extensive use of carbon fibre such as these front wings and the new roof



with a standard Z4 35is? Another world away. The softly set up standard BMW, trimmed for comfort and 'safe' understeer, feels almost stolid, almost unsporting. Today's standard, forgiving car sadly can't offer the sharp handling which you associate with the first generation Z4 (E85).

Overall we're left with an impression of a machine that really does stir one's emotions. Emotions? In a diesel? Which occasionally breathes a hint of diesel oil into the interior? Which on starting rattles like the neighbour's rep-mobile? Which growls darkly at the front but can't sing melodiously from the exhaust? Yes! Because the baffled looks of a few car nerds who notice that the engine note and car don't go together, are pure gold. And then there's the fab feeling of driving something unique, special and exotic.

This unique, special, exotic car could, however, make you curse in everyday use. For example, in the supermarket car park when you have to unlock the carbon fibre bootlid in two places, then take it off completely and put it to one side before loading your shopping. Then there's the short-travel suspension

which the driver has got used to but passengers will never take to. Add to that the always high interior noise level (yes, even the sound insulation has been scrimped on) and that when reverse parking it's very hard to see the rear extremities... and the former Roadster has now become a year-round closed top coupé. Oh well, you can't have everything!

It's not a cheap conversion, though, even if using a secondhand Z4 as a basis. Almost all the internals have been thrown out and the new engine and eight-speed automatic alone cost nearly €50,000. Then it goes without saying that the suspension and brakes have to be uprated to match the huge power gain. The interested party could save a few euros though by skipping the lightweight components.

Either way, AC Schnitzer has come up with a cracking package for this car. A heavy, extremely powerful diesel in a delicate lightweight coupé? We were sceptical, but our scepticism gradually developed into unalloyed enthusiasm during the test – AC Schnitzer has successfully pulled out all the stops to create this extraordinary concept ●

AC Schnitzer ACZ4 5.0d

ENGINE: Six-cylinder, triple-turbo diesel, 24-valve

CAPACITY: 2993cc

BORE/STROKE: 90.0 x 84.0mm

COMPRESSION RATIO: 16.0:1

MAX POWER: 430hp @ 4400rpm

MAX TORQUE: 620lb ft @ 2000-2400rpm

0-62MPH: 4.0 seconds

0-124MPH: 12.9 seconds

QUARTER-MILE TIME: 12.31 seconds

TOP SPEED: 173mph

ECONOMY: 20.6-39.8mpg (27.2mpg on test)

MODIFICATIONS

ENGINE: Triple-turbo straight-six diesel, retuned

TRANSMISSION: Eight-speed automatic

FRONT BRAKES: 380 mm, vented and slotted, six-piston callipers

REAR BRAKES: 370mm, vented

WHEELS: AC Schnitzer Type VIII lightweight forged wheels 'BiColor Orange', 9.5x19 inches

TYRES: Michelin Pilot Super Sport 265/30 ZR 19 Y

ROOF: Replacement of the two-piece, electro-hydraulically operated, folding steel roof with a CFRP hard-top saves 56kg, the CFRP bootlid a further 34kg. The roof is now fixed and the bootlid can only be opened by removing it fully

GLASS: The rear screen and rear side windows (which can no longer be lowered) are made of lightweight polycarbonate

SUSPENSION: AC Schnitzer racing suspension, fully adjustable in compression and rebound stages

AERODYNAMICS: AC Schnitzer carbon front spoiler, AC Schnitzer carbon sports wings, AC Schnitzer bonnet vents, AC Schnitzer rear spoiler (two-piece), AC Schnitzer carbon rear skirt insert

INTERIOR: Interior trim elements painted, carbon racing seats with ACZ4 5.0d logo, AC Schnitzer aluminium footrest and pedal set, AC Schnitzer instrument cluster

PRICE: €114,000 (one-off build cost)



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What do you do if your M3 is starting to feel a little vanilla and you want to explore further avenues of performance? Er, buy an X5, of course...

Words: Daniel Bevis Photography: Jape Tiitinen

"Never apologise. Never explain. Just get the thing done, and let them howl!" So said Agnes Macphail, the first woman to be elected to the Canadian House of Commons, thereby leaving mankind a handy and quotable get-out for doing things that may raise eyebrows. It's all too easy to do things that you think people will like or approve of rather than things you actually want to do, for the sake of an easy life; this is particularly true in the sphere of car modification, especially in an age of the immediacy of social media. Perceived deviations from the accepted ways of doing things can be met with an instant backlash – 'you've done that wrong', 'you've ruined that', 'that looks terrible', blah blah etc. Who cares? You only live once, your brief glimmer of time on this Earth is far too fleeting to worry about what a bunch of wallies on the internet may be judging you for.

All of which brings us to the elephant in the room here – that we're looking at a modified X5, rocking enough horsepower to shame any 1990s supercar you care to name, and sufficient torque to knock the world slightly off its axis. Now, there will be people out there shaking their heads, tutting, passing harsh judgement over something that they view to be unnecessary and absurd. And while it's tempting to tell these people to stick the entire X5 in their anodised aluminium pipes and try to vape it, it's perhaps more constructive to simply attempt to encourage an openness of mind. For you see, a big-horsepower X5 actually makes a lot of sense, if that kind of thing is your bag. And even if it isn't, you surely can't help but admire the achievement of wringing 775hp out of such an imposing machine.

Yes, you read that right – seven hundred and seventy-five horsepower. That's rather a lot, isn't it? Near enough what you'd expect to find lurking between the sleek hips of the new LaFerrari, which is a fairly devastating comparison. Or, to continue the

Ferrari tit-for-tat, it's as powerful as two whole Testarossas. Two! This, then, is an X5 that's worthy of your attention. But this was always bound to be the way – its owner, Aleksi Sorvari of Hyvinkää, Finland, has something of a taste for big-horsepower machinery. Driving trucks for a living as he does, he has a keen affinity with supersized displacement, aggressively loud turbo whistle and stump-pulling torque, so it's only natural that this enthusiasm for telephone-number power would carry over into his private life. Before the X5 he owned an E92 M3, which replaced a Mercedes-Benz CLS55 AMG. Given that Aleksi is just 22 years of age, this is a fairly robust introduction into the world of motoring excess. Goodness only knows what the next step might be...

"I bought the M3 about three years ago to replace the CLS," he explains. "I loved it, and it received a few modifications – three-piece Rotiform wheels, various carbon fibre parts and so on – but after three years of ownership I felt that it was time to move forward and try something new. The X5M seemed to be the obvious answer; it's big, it's powerful, it's different. It only took a few days of searching to find a decent X5M in Finland, so I bought it and that was that."

Aleksi must be in a tiny minority of people who've decided to chop in an M3 for an X5 on the grounds of wanting something fun and different rather than, say, being forced into the decision by a growing family or some other reason of practicality. But who says decisions like this have to be rational?

It can certainly be argued that the X5M is a solid starting point for a project. After all, this is no ordinary X5 – and as much as it may irritate the old-school badge purists, it's a bona fide M car too. Debuting at the New York Auto Show in April 2009, it was one half of the first pair of xDrive cars to be developed by M GmbH, alongside the equally controversial X6M. The twin-turbo S63 motor offered a juicy 4.4-litre displacement from eight thudding cylinders, its 555hp surprising many a soccer mom at the traffic lights on







The interior of the X5M has been given a subtle but stylish makeover with fresh new leather with white stitching

the school run. Contemporary magazine tests verified its ability to accelerate from 0-62mph in four-and-a-half seconds, which is frankly loopy for a vehicle with this sort of mass (not to mention an aerodynamic profile that laughs in the face of drag coefficients in favour of belligerently shoulder-barging the air like a breeze block flung from a trebuchet), and the tech gurus at M HQ ensured that it wasn't just a brainless drag racer, tweaking and honing the suspension and steering to make the hulking brute handle like a nimble sports car. It's an irritator of supercars that you can use as a van; conversely, it's a sensible, practical family car that also happens to have launch control and paddle-shift. So no, there certainly isn't any need to apologise for the X5M. It is mighty.

And that outstanding factory might was just the beginning for Aleksí's X5. "A friend of mine found a German chap in Abu Dhabi who has superior skills in tuning BMWs," Aleksí grins. "His name is Jimmy

You surely can't help but admire the achievement of wringing 775hp out of such an imposing machine



Pelka, and he operates out of PP-Performance in Weissbach, Germany when he's not in the UAE. As soon as I'd engaged him to tune my X5M everything started to move forward, and progress was quite fast – as is the way with top professionals. I ended up making quite a lot of trips to and from PP-Performance while it got everything running perfectly, and the results are pretty phenomenal."

This was very much an international build too, with Aleksi keen to get experts involved in all necessary elements of the horsepower race. The turbos, for example, were hand-built in Finland. "These are very special units built by Turbotekniikka in Helsinki," he divulges, evidently pretty pleased with having chosen the right guys for the job. "They were hyped to be involved with the build, particularly when we started talking about targets for horsepower figures. This kind of project was something different from its average daily routine, which is usually just service and sales; in

the end, they developed and constructed a pair of bespoke turbos for me comprising Garrett turbo housings with Mitsubishi Evo IX internals and billet compressors." Impressive stuff indeed, and a very focused approach. And with these otherworldly turbines spinning freely and boosting hard, it was over to Buchloe, Germany to have a word with the eggheads at Alpina. Well, why not eh?

"We needed to get a quality custom product to work with these monster turbos, and it seemed obvious that Alpina would be the people to deliver the goods," reasons Aleksi, clearly a man with a mind to do things properly. These custom manifolds, enjoying a ceramic coating from Martelius, now find themselves mated to a full lightweight exhaust system from Akrapovic – a company based in Slovenia, and best known for motorcycle exhausts before more recently moving into racing and performance road exhausts for cars. The geography of this build really is

darting all over Europe. But that's evidently what you need to do if you want to turn an X5M from a supercar-annoy into a proper supercar in its own right. Some degree of legwork is required.

Much like with M GmbH's own approach to the X5M, Aleksi has been keen throughout the project to ensure that this is a cohesive and all-pervading programme of upgrades, rather than simply shoving a load of dumb horsepower into the SUV to see what happens. A neat manifestation of this is his decision to upgrade the brakes to a setup with rather more beef. When you've got LaFerrari levels of thrust to rein in, it makes sense to tickle the standard fare a little, and what's ensued here is a Brembo BBK upgrade featuring six-pot callipers, with the front discs a dinnerplate-like 405mm across. Fans of imperial measurements will have run a swift mental conversion and arrived at a figure of close to 16-inches and, as such, Aleksi needed some pretty big



Hidden under all that carbon and plastic is a twin-turbo V8 monster with 775hp and over 800lb ft of torque!

wheels to clear them. It's safe to say, however, that his choice represents a level of overkill comparable to the bonkers figure on the dyno sheet. "The wheels are 22-inches in diameter," he chuckles. "They're HRE three-piece rims, ten-inches wide at the front and thirteen at the rear." The Dunlop rubber that tenaciously clings to them is suitably girthsome, offering up a whopping 335-section at the back. That represents a contact patch comparable to the average London back garden, although it's wholly necessary given what the poor hoops have to contend with – 826lb ft isn't exactly forgiving. Aleksi needs this much rubber in order to stop the very Tarmac beneath him from rucking up like an old hallway carpet.

In addition, the suspension has been hunkered down somewhat in accordance with the newfound avenues of thrust. Starting as a teetering all-terrain cruiser, it's never going to be scraping its sills on the kerb, of course – you'd need some body sectioning, a raised chassis and tubbed arches at the least to achieve that, but that's a whole different ballgame – but you'll spot that it's unmistakably lower than your common or garden X5, in spite of wearing such vast wheels. This is courtesy of some H&R lowering springs at the front, while the stock airsprings at the rear have been gravitationally persuaded by some bossy new software.

And while the boffins at PP-Performance were busy rewriting code in the X5's brain like some freaky DVD extra from *The Matrix*, they took the opportunity to reprogram the gearbox software too; the X5M 'box is optimised for performance, but BMW probably didn't

figure this sort of performance running through it...

The nature of cohesiveness with a project like this dictates that the comfort and aesthetics are on a level pegging with the grunt, as is the nature of the entire X5 range; while stripping out the interior and fitting a single Kirkey race seat would undoubtedly bolster the performance creds, that's not really the point of an X5M, so Aleksi has enhanced rather than pared back – after all, this is his daily driver. The comfy seats have been artfully reupholstered with black leather and white stitching by KhreliX Design in Vantaa, and the exterior has received a few treats to warn other road users that the low-slung ride height augurs something frightening. Carbon fibre abounds, from the huge diffusers to the subtler detail of the kidney grilles and badges, working alongside the darkened lights and windows. Employing carbon-fibre in a project like this for reasons of weight-saving would be an exercise in futility, but that isn't the point; this is about presence, aggression, forthrightness.

It's fiercely unapologetic too. Okay, there will be a lot of people out there who can't see the purpose of a performance X5, particularly one that could show a seven-figure hypercar a clean pair of heels, but we get the strong feeling that Aleksi isn't altogether bothered about that. He wanted an X5, so he built the best one he could, using the finest materials and resources at his disposal. The opinions of the naysayers are immaterial; there's no escaping that number – 775hp. Seven-seven-five. If he can achieve this kind of godlike grandeur at the age of 22, we can't wait to see what Aleksi does next ●





E70 X5M

ENGINE & TRANSMISSION: S63B44O0 4.4-litre twin-turbo V8, custom-built turbos by Turbotekniikka OY (Kim Sulin) and Fin-Turbo (Niko Turunen), custom Alpina exhaust manifolds with Martelius ceramic coating, Akrapovic exhaust system, mapping by PP-Performance, stock transmission with upgraded software, 775hp, 826lb ft

CHASSIS: 10x22-inch (front) and 13x22-inch (rear) HRE three-piece wheels with 295/30 (front) and 335/25 (rear) Dunlop Sportmaxx RT, Brembo six-pot BBK with 405mm front discs, H&R front lowering springs, rear airsprings lowered with new software

EXTERIOR: Vorsteiner carbon fibre front and rear diffusers, carbon fibre kidneys and emblems, window tints, headlight tints, rear wiper delete

INTERIOR: Full retrim in black leather with white stitching by KhrelIX Design OY, Vorsteiner floor mats, premium BMW audio

THANKS TO: Bimmer Tuning Club of Finland (btcf.fi)





SPRINGWATCH

It's hard to fault the latest M3 and M4 but there are still a few sensible tweaks that can make a huge difference without breaking the bank, such as Litchfield's bespoke spring and spacer package that promises to improve handling without ruining ride quality

Words: Paul Cowland Photography: Chris Wallbank







The overwhelming impression of this kit
is that it makes the car more obedient
and neutral in its behaviour

When so much work and money goes into the development of a car like the M3 or M4 it's easy to argue that the car arrives in the showroom in perfect shape, from a tuning perspective. After all, against the billions of dollars that BMW has thrown at the car to make it a world beater, how can the comparatively paltry spend of the tuning aftermarket make it any better? Surely, if there was an improvement to be made, BMW would have done it, no? To a point, that's true, of course. BMW has done a superb job of making a car that suits all people... and it has achieved it at a price point that many enthusiasts can afford. And that's the rub in modern car design, you see. You have to design every component to appeal to the greatest number of potential customers – and then you have to optimise it to achieve the greatest possible quality, but at the smallest possible cost.

Unfettered by these last three constraints, Gloucestershire-based BMW tuner Litchfield has a much clearer remit when looking to improve the handling and chassis feel of its own M4 and its customer's M3 and M4s. After acquiring one of the first cars in the UK, Litchfield had plenty of time to rack up road and track miles to see what could be improved. Working closely with World Touring Car Champion, Rob Huff, who is the firm's official test driver, Litchfield's R&D team identified that the factory spring rate could be further optimised to give a more precise and rewarding drive without trashing ride quality. On the factory floor the stock spring has to balance legislative ride height restraints, snow-chain accessibility, cobble-stone street testing... you name it. Under Huff's watchful eye, Litchfield wanted to create the ultimate handling package for road and track whilst improving the car's stance at the same time, which was somewhat lofty for a near-supercar.

The process began by consulting Eibach springs. The well-respected German company provides the bounce, support and control for many of the world's finest automotive manufacturers, including the likes of Bugatti and Ferrari. With that level of production and experience at his disposal Litchfield founder Iain Litchfield was free to work from a blank sheet of paper, starting with the factory springs before working through a series of prototypes with Huff. "We were both looking for different things during this phase," explains Iain. "Rob possesses an entirely analytical brain during testing and he's looking for feedback, for marginal handling improvements and for control enhancements. He is able to drive at a level that most of us will never attain so it's always good to know that the few clients that can achieve that will have the package that they need beneath them. From my side, I'm looking for those traits, too, but from the same viewpoint and at the same level as most amateur enthusiasts that enjoy a track day or a spirited B-road drive. I also want to know if it's nice to drive to work... or how it feels with the kids and luggage in the back. It's important to come at this from both perspectives, I think. After all, many M3s and M4s are often the owner's only car. It needs to retain that all-round ability."

The result of these dual-inputs, allied to an extensive dialogue with Eibach's own R&D team,

is a spring kit that features a raft of design elements that would doubtless render the kit too expensive to ever be fitted to a volume production car. Purchased as an upgrade from Litchfield, however, they make a great deal of sense. The springs themselves are cold-wound from competition quality chrome silicon steel, before going through a complex hardening process to eliminate sagging or rate change over time. Finally, a sophisticated epoxide coating ensures a long and high-performing life, even during the saltiest of British winters. Every stage of this process has been subjected to the gruelling ISO 9001 quality assurance protocol and a five-year warranty is the result.

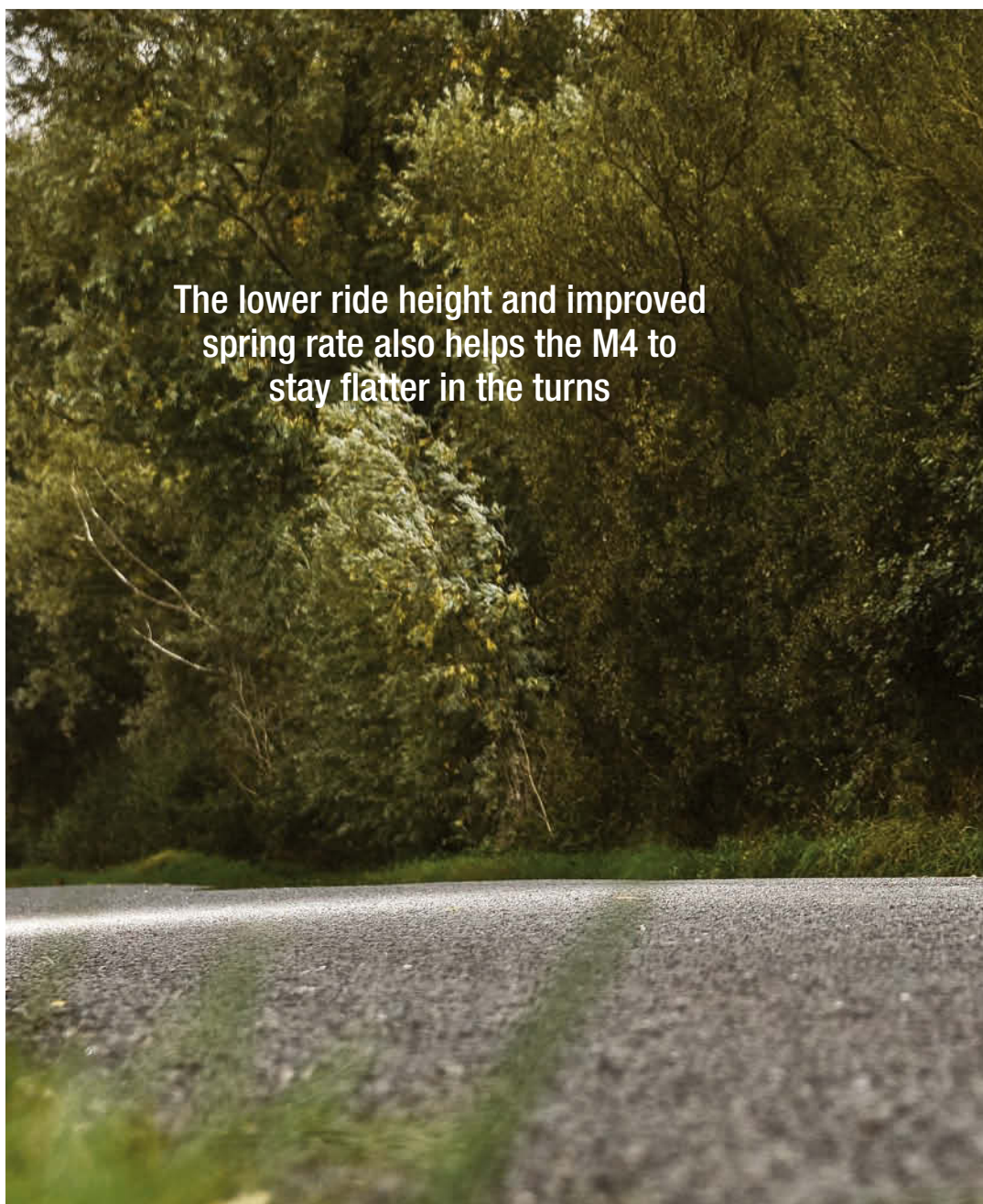
Road and track tests revealed the perfect stance on the M3 and M4 chassis would be optimised with a carefully considered 25mm drop up front and 20mm at the rear. Not only does this slight rake give the car a superb attitude visually, but this marginal increase in weight on the front end gives the car much nicer turn-in characteristics. The lower ride height and improved spring rate also helps the M4 to stay flatter in the turns, increasing mechanical grip and reducing load transfer. In short, it allows the already impressive M3/M4 pairing to achieve a simply staggering degree of handling performance on road and track. Most importantly, all parties were keen to ensure that the kit worked perfectly with the sensory software of the factory EDC system, to ensure safe progress when pressing on during fast road driving – as well as making this spring kit a sensible option from an insurance company point of view.

Joining the team on a test session around their Gloucestershire HQ, and later during a track day at Silverstone, it was easy to see Iain and Rob's differing test approaches in action, although it was also clear that Iain was no mean pedaller himself. Having driven a couple of completely standard M4s we were also keen to see the difference over the standard part. Eschewing the ribbon smooth Tarmac of the track for the real-world lumps and bumps of the surrounding back roads, it was quickly evident that this upgrade hadn't spoiled the car's impeccable manners at all. Working well in all damper modes, the springs made the car feel precise and well measured. Straight line quality was pretty much identical with the outgoing kit but when really throwing the car into the turns, it felt much flatter and more planted, allowing me to balance the car on the throttle through the turns. While we were nowhere near the grip limit of the tyres, Litchfield's demo M3 really felt as if you could simply point the front where you want to go, with the rear all too happy to follow. The overwhelming impression of this kit is that it makes the car more obedient and neutral in its behaviour as well as being immediately more responsive to steering inputs. Put more succinctly, it feels nicer to drive on the limit, which can be no bad thing given where the limit is on a machine as capable as this one!

In an industry that looks to save every penny possible, it's easy to understand why BMW didn't opt for the 'quality first, cost second' solution that the kit represents, but when you learn that it's very sensibly priced at £282 including VAT, (plus £234 including VAT to fit and align it to Mr. Huff's carefully prescribed settings) then it has to be



The lower ride height and improved spring rate also helps the M4 to stay flatter in the turns





Litchfield also has some tasty carbon fibre upgrades available for the M3 and M4 including add-ons for the front spoiler and a rear diffuser



Litchfield called on the expertise of Eibach and WTCC Champ, Rob Huff, to design a set of springs that would improve the M3's chassis without breaking the bank



one of the very first mods that M3 and M4 owners should consider.

As well as trying the car with just its spring upgrade on, Litchfield also invited me to take a spin with its new bolt-on spacer kit fitted. Not only does this help the M3 to achieve a near-perfect stance, with each wheel really filling the arches rather nicely, it also gives the car a flatter, more squat attitude with steering becoming even more responsive thanks to the car's track measurement being increased. The

thickness of these spacers has been carefully optimised for a balance between looks and handling, with the final package arriving at 12mm each side up front and 15mm at the rear. As a simple – and easily reversible – modification, these also make an excellent case for themselves, either on their own or as the perfect augmentation for the spring kit. Priced at £86.40 for the front axle and £96.00 for the rear (including VAT) they certainly tick all the boxes.

Is it possible to make the best better? Well, based on an enjoyable afternoon spent carving through the Gloucestershire countryside with these two small-but-perfectly-formed changes, then we would have to say that it is... ●

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Under the hammer

Our roundup of the prices achieved by BMW classics over the last month or so

Classic Car Auctions Warwickshire Exhibition Centre

Operating as Silverstone Auctions' more affordable arm, Classic Car Auctions (CCA), had a fine selection of machinery on offer at its sale in December which took place at the Warwickshire exhibition centre. As usual there was an eclectic mix of machinery on offer ranging from Wolseleys to Fiat 500s and even including an ex-David Beckham pimped-up Range Rover, but unsurprisingly it was the BMWs we were most interested in, with seven Bavarians going under the hammer.

First up was one of the last-of-the-line E30 Convertible models to have been sold before it was replaced with the E36, a Neon blue Design Edition. This was said to be one of the 200 examples imported to the UK, offered with a manual gearbox, some history and an indicated mileage of 116k. Offered without a reserve it looked to be very good value when the hammer fell at £2200. A 1977 633CSi with a manual gearbox and 109k miles showing failed to sell with a pre-estimate of £7000-9000, and while it looked to be in pretty decent condition for an early Six, perhaps its non-period front spoiler from a later M635CSi and bootlid spoiler from a later E24 might have put buyers off who were looking for originality at this price point.

For us the bargain of the sale was an E36 318iS Coupé that had only covered 25k miles. It looked almost like it had just driven out of the showroom in 1994 and while it might have had the less desirable automatic gearbox it looked like an absolute steal at just under £2500. The market still seems a little unsure about E9 CS Coupés – the more desirable CSLs (and to a lesser extent CSis) generally seem to find homes – but the 1973 3.0 CS at CCA failed to find a buyer despite looking to be a straight, honest machine. Recently imported from Canada and yet to be registered or MoT'd it's possible buyers were put off by the potentially high restoration costs, despite a modest pre-sale estimate of £13-15k.

A very well presented and award winning right-hand drive Isetta 300 that carried a pre-sale estimate of £18-£20k also failed to find a buyer, perhaps because the car now sported a non-original colour scheme and a leather interior. Another non-seller was an E39 Alpina B10 V8, despite being offered with no reserve. Its mileage was on the high side at 144k but it looked very presentable and surely would have found favour with an Alpina fan. Maybe its bright red leather interior that adorned every surface – including the gear lever and parts of the steering wheel – put purchasers off?

Last up at CCA was a very tidy-looking 1972 2000 Touring in Inka orange that looked like a delightful rolling restoration proposition. Some welding was required for it to be granted an MoT, but at £3080 for one of these rare and desirable machines it looked to be a very decent buy indeed.





H&H Auctions Chateau Impney

Like the CCA sale, H&H's year-ending event had a wonderfully eclectic array of machinery on offer with everything from a V8-engined Austin A35 to a Ferrari 328 GTB going under the hammer. First up for the BMW contingent was a rather lovely looking 2002 Targa dating from 1973. Reputed to be one of just 349 made in right-hand drive this Golf yellow example had been subject to a restoration in the past and had just had a complete brake refurbishment and new tyres. Its condition was described as very good and with a hammer price (including buyer's premium) of £7345 it looked like someone had snapped up a pre-Christmas bargain.

While the CCA E24 didn't sell, the 1985 635CSi offered by H&H did find a buyer. Offered in Arctic blue with cream leather and in the 'driver's' spec (manual gearbox, limited-slip differential) and showing 127k on the odometer it looked to be a good buy at £4250, even if the TRX metric wheels had been replaced with differently sized metric rims from an E34!

The one BMW that didn't sell at H&H was a 1990 Alpina B10 3.5 – a left-hooker that was said to be in fine fettle after having spent many years in a collection in Japan. Showing just 44k kilometres (approx 27k miles) it did look utterly stunning and it was a surprise when it failed to find a home with a pre-sale estimate of £12,000-£16,000. It would have been strong money, but there can only be a handful of these left – it's currently up for sale at a classic car dealer for £22,995...

While CCA's fully restored Isetta didn't sell H&H's less immaculate offering – a 1961 left-hooker – did find a buyer at £7280. Originally red, but now painted in a rather bright yellow and blue it fell a fair way short of its £10-£12k estimate. Strictly speaking the Z3 2.8 isn't yet a classic, but who knows what the future may bring? Either way, the 2.8-litre 1998 example that sold was in immaculate condition and with just 76k miles on its clock it should provide its new owner with many more pleasurable miles, especially at a reasonable £4592.

Last but by no means least at H&H was an E28 M535i which sold for bang on its pre-sale estimate of £3500-£4500 when the hammer fell at £3955. Like the 635CSi it was also offered in the 'driver's' spec, this time with the rare Getrag dog-leg gearbox and limited-slip diff combo. Despite a considerable lay off in storage the car had just been issued with a fresh MoT, although the seller did admit that further work was required. Despite this it still looked like a good buy.





Classics at the Castle

No, not the well-known Porsche event at Hedingham Castle, but one of Germany's premier concours events

Words: Jeroen de Laat Photography: De Laat Foto

Schloss Dyck, a square 17th century castle surrounded by large flower gardens, is located in the west German Rheinland and since 2006 this has been the venue for Germany's most stylish concours event, Classic Days. Clearly inspired by the events at the Goodwood Motor Circuit the organisers put a lot of effort into creating a similar atmosphere, allowing the event's visitors to travel back to the olden days. An ever-increasing number of people (30,000 this year) dress up and stroll through the gardens to enjoy the fine food and good music, watch fashion shows, admire the castle and above all soak in the wonderful gathering of classic cars and motorcycles.

There was an impressive collection of cars on display this year with several unique examples like an early Porsche Type 64 prototype, a wide variety of classic Bugattis and the multi award winning 1937 Delahaye Cabriolet. BMW's rare 3/15-based 1hle roadster from the late 1920s blended right in and it didn't end there: 319, 327, 328... the list went on...

Interviews and autograph sessions were held on a regular basis and this year we saw some big names from the DRM and DTM years like Ellen Lohr, Klaus Ludwig and BMW legend Hans-Joachim Stuck. Also making an appearance was Jaguar legend Norman Dewis and guest of honour, Sir Stirling Moss. It was wonderful to be eye-to-eye with these legends and to see both the visitors as well as the special guests enjoy every minute of the sun-blessed event.

The castle and its parks are surrounded by corn fields where there were hundreds of car clubs with

practically every make and model present. This aspect of the gathering – including proud dressed-up owners – could have taken up a whole day by itself.

There was constant activity in the Racing Legends paddock. Cars were warming up for demo laps and brand parades, but also some serious laps on the *Rundstrecke* too. People gather along this temporary track, parking their classic Isetta or '02 and have lunch while automotive history passes by just a few meters away from them. And that history varied this year from a humble 4hp De Dion Bouton to the eardrum-shattering 27-litre Isotta Fraschini. And that is 27 litres of displacement, not fuel tank capacity.

Was there some BMW history on the event track? Sure! The European Championship-winning Formula 3 Monopole, the white Cooper and the silver LTE. All cigars from yesteryear that are propelled by a BMW boxer motorcycle engine. More well-known are the BMW-based Veritas models and these were among the faster cars on the track just like in their heyday. We also saw a lovely RS or Rennsport Spyder but we were most impressed to see a Veritas Meteor Formula 2 car do fast laps while sharing the impressive exhaust note from its engine with us. A familiar sound as the engine was based on the inline 'six from BMW's 328.

The lovely scenery and great cars, both on display and in action, meant we had a fabulous weekend. The atmosphere and weather were fantastic, and there was something for every car enthusiast. The 2016 edition is planned for 5-7 August – an ideal stop off point during a summer European tour!





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E9 CSL

The BMW Alpina 3.5 CSL – BMW M49/3 – as raced to tenth place at Le Mans in 1976 by Harald Grohs, Sam Posey and Baron Hughes de Fierland. A fine Spark 1:43 scale model supplied in the correct Gitanes livery.
£50



E52 Z8

Not a racer, but a cracking BMW nonetheless. The E52 Z8 as it was produced from 1999 to 2003. A fine 1:43 scale model of 007's supercar supplied in the Racing Models showcase.
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STROKE OF GENIUS

If you thought the Z1 looked gorgeous and handled brilliantly but was lacking in the power stakes you could always have endowed it with some more urge thanks to a Hartge 2.7 conversion

**Words: Adam Towler
Photography: Gus Gregory**

‘Look, that car is driving along with no doors’ – that’s what the assorted traffic cruising on the M40 this morning is thinking, it’s written all over their faces and readily decipherable from a spot of lip reading; confirmed by the camera phones that are being raised as we pull alongside. I *could* drive this Z1 with the doors ‘up’, of course, but for the sake of novelty it just has to be tried, even if it means a decidedly fresh blast of slipstream air up my left-hand trouser leg. Given the ‘motorway’ speed we’re moving along at that’s hardly surprising, but then this is no ordinary Z1 – as if the word could ever be applied to BMW’s late ‘80s sports car in the first place.

I’ve never driven a Z1 before today, but I’ve certainly been curious ever since my school bus passed a black Z1, parked, usually, en-route to and from school. It was an attractive, exotic sort of machine, and that perception was more than just skin deep. For the time, the Z1 was quite unlike any other car in production.

Said to have been inspired, at least in part, by comments from a journalist made to then-BMW chairman Eberhard von Kuenheim, the Z1 (Z for ‘zukunft’ meaning ‘future’) project was expedited by Wolfgang Reitzle, the famous head of BMW R&D in the 1980s and who would later go on to head up the Premier Automotive Group at Ford, before exiting the industry under something of a cloud.

The car was first seen in concept guise during 1986, and was built by BMW Technik GmbH as a way of exploring new methods of production. Technik decided to illustrate its new thinking through the



It's an odd feeling to watch the door automatically drop rather than swing outwards

medium of the roadster, with another famous name at the helm: Ulrich Bez, later of Porsche and finally CEO at Aston Martin for many years. Production began in 1988, with cars delivered from 1989-1991.

The core of the Z1 is a galvanised steel monocoque, with notably high sills and an additional tubular frame that runs up the A pillars, increasing the rigidity of the structure. The floor is a sandwich of GRP and foam, bonded and bolted into place. This has three advantages: it's strong, it won't rust and it provides a ready-made smooth underfloor to the benefit of aerodynamics. In fact, BMW maximised this feature by exiting the air over an aerodynamic rear silencer and gap in the rear valance, thereby negating the need for a fixed rear spoiler.

The actual body you see, the skin if you like, is not in any way structural. It's made from a mixture of Xenoy thermoplastic (the front, rear and side panels) and an epoxy glassfibre for the bootlid, roof cover and

the bonnet. A special painting process was developed to maintain the required quality of finish on the panels. As for those iconic doors, they disappear down into the sills, and are operated by a push button in the rear panel from outside the car, and by pulling the door handle from inside in the normal fashion: it's an odd feeling to do this for the first time and watch the door automatically drop rather than swing outwards.

It wasn't just the construction of the Z1 that was ground breaking; it actually contained a very forward-looking mechanical layout that still has ramifications for today. Although the car is based heavily on the E30 325i of the same period, the inline 'six' was moved back within the wheel base and sits behind the front axle line, giving the car the near 50:50 weight distribution once so heavily marketed by BMW. The McPherson struts of a regular E30 are used on the front axle, but the Z1's other major innovation was

the introduction of the so-called 'Z-axle' rear, a form of more advanced multi-link suspension that would transform the stability and handling of the forthcoming E36 3 Series that the Z1 pre-dated.

What of that sonorous 2.5-litre engine? In standard form it cranks out 170hp, which although sounds faintly quaint by modern standards, it looks altogether more promising when you consider the diminutive proportions of the Z1. That is until you look up the kerbweight, and notice that at 1250kg, it's 105kg heavier than a 325i. That may only be the weight of a very rotund passenger, but when your power-to-weight ratio is constructed more from a lack of mass than outright horsepower, these numbers matter. Correspondingly, the Z1's performance stats were impressive, but hardly scorching for a car that promised so much in the handling stakes. Michael Scarlett, writing in *Fast Lane* magazine during December 1988, commented that: "It's an exhilarating



The M20 engine fires up with a fabulously organic rasp and rumble. I'm going to enjoy this car a great deal

performer without being quite as quick as such a secure and responsive chassis deserves".

That's where the car I'm due to drive today comes in. It's parked to the rear of Birds Garage when I arrive, accessed by a stroll through a showroom full of nearly new BMWs of various descriptions. Next to them, the Z1 appears tiny, and in its resolutely dour and functional Urgrün Metallic paint it makes a completely different sort of impression. The design is very much of its time, but particularly attractive if you can appreciate the proportions, the restraint in the details and the precise nature of what styling flourishes there are. It's especially successful at including the BMW kidney grille into a low-slung sports car shape, while the treatment at the rear of the car is redolent of the E36 3 Series. Talking of low slung, its meagre stature and the provision to drop the doors vertically was apparently inspired by Reitzle's fond memories of his uncle's Triumph TR6, where a cigarette end could be

stubbed out on the road when pulled up at some traffic lights because the car was so low to the ground.

'H5 KWR' is for sale at Birds when I drive it, but has subsequently sold by the time this story will reach print. What makes it even more special than the other 25 Urgrün Z1s imported into the UK, out of a total UK allocation of 85 cars, is that it features a Hartge 2.7-litre conversion. The increase in displacement has been achieved by lengthening the stroke of the 'six' from 75mm to 81mm, with a bore size unchanged at 84mm. So configured, the total capacity is 2693cc, and by then shaving some material from the cylinder head the compression ratio has been taken from 8.8:1 to 9.7:1. Together with a remapping of the ECU, the peak power output jumps to 205hp (at 6100rpm instead of the 5800rpm peak in the standard car), with torque rising from 164lb ft at 4300rpm to 189lb ft at a slightly lower 4000rpm. Both figures make for exciting reading on paper, so I'm very keen to see

how that will translate on the road.

Before I thumb that incongruous door-opening button, there's just one more thing to consider: price. The Z1 was always a very expensive car, retailing in Germany for around £26,000 once production started flowing. Opting for the Hartge engine meant forking out another £5201.39, including fitting, to Birds Garage, then based in Amersham, Buckinghamshire. As a comparison, this would take the list price well beyond that of a new entry-level Porsche 911 of the period. Modifications didn't end there either, with a full Hartge conversion – including wheels, body modifications and all the other usual tuner items – costing £11,500.

The driver's door falls down with a chuntering sound that doesn't match the visual sophistication of the operation. It takes a bit more effort to climb in over the high sill, but once inside it strikes a nice balance between being a cosy sports car and not



Everything has that late-'80s west German look and feel to it that as enthusiasts always raises a smile

cramped. I take a look around the cabin and smile, because everything has that late-'80s west German look and feel to it that as enthusiasts always raises a smile. For a sports car – a concept sports car brought to life at that – it is unerringly pragmatic, with a simple dial pack straight ahead and the familiar BMW switchgear of the time grouped closely together on a small central panel. The leather bucket-style seats have a curious 'camo' effect on their darker sections, which looks more like the sort of material you might find on a ladies winter jacket of the period, complete with chunky shoulder pads. The pre-airbag steering wheel is another Bauhaus-like example of simplicity, with a very small central boss: it's a bit too much of a reach away for me, but fairly comfortable nonetheless.

The hood has already been lowered; it was simple enough, requiring manual unlatching from the header rail and then folding underneath the panel behind the occupants' heads. The M20 engine fires up with a

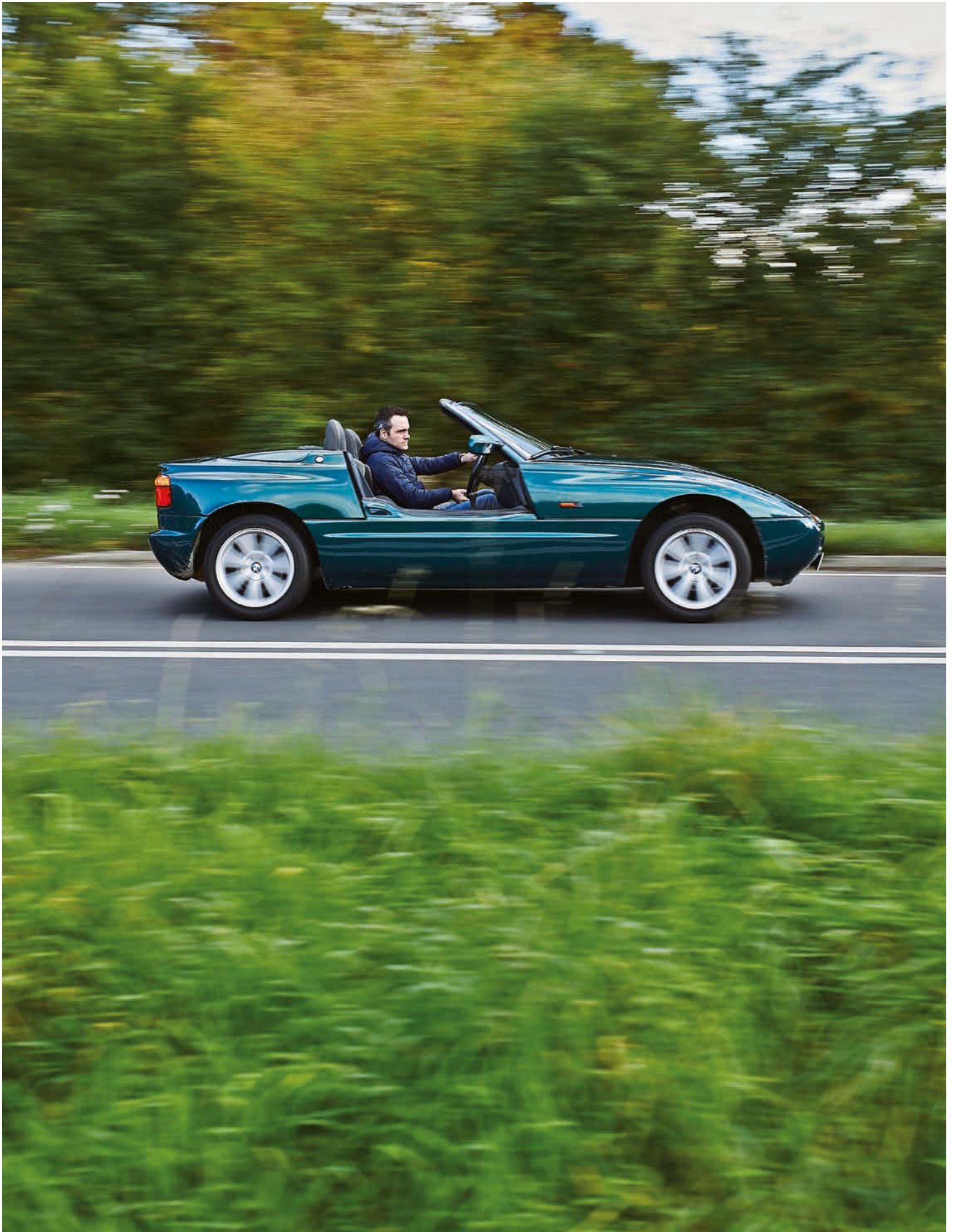
fabulously organic rasp and rumble, and I've already decided I'm going to enjoy this car a great deal. You don't get that sort of noise from a modern, low-pressure turbocharged four-cylinder engine, after all.

The Hartge Z1 is very easy to drive around in slowly. The assisted steering requires no real effort, although at 3.9-turns lock-to-lock there's a reasonable amount of arm-twirling to be done. The star so far is the gearbox, which again easily trumps anything modern in the way you can feel one cog giving way to the next. Maybe it's the 24 years that have passed since it left the factory, grinding it down to smoothed perfection, but it's just so nice to swap gears, often purely for the sake of it. Why can't modern cars get these details so right?

It's the combination of the engine and 'box that preoccupy the initial attention, the car snapping forward under hard acceleration but hardly forcing my torso back into the seat. But as soon as I've dropped

the doors then it's these that take over. It reminds me of those post office Sherpa vans you'd once see: hurtling around with the bare legs of a shorts-wearing postie pumping the pedals with the sliding door always swept back in the open position. If that sounds as though the feeling is one of being exposed in the Z1 then that's only half true, for me, because the high sills mean you don't feel as on show as you might, but the sudden blast of cold air confirms this is much more than simply dropping the side windows.

There's no structural downside to driving along like this, and not only does it garner plenty of kerbside attention, it also brings you closer to the sensations of driving – like you might get from a two-wheeled device. The Z1 turns out to be a smooth character. Predictably it's much softer in setup and character than a more recent BMW roadster, which gives it a relaxed way of approaching a decent road. The steering response is a little slow, but that works with





rather than against the initial roll rate, and once you have the car pointed into a corner it does feel very composed. The 'six' has a lusty response to the pedal, and a really invigorating soundtrack when wound out, although would I feel it was fast enough if I'd just dropped over five grand on it (bearing in mind five grand was a considerable sum 24 years ago)?

That I'm not completely convinced by, but then I think that same sentiment applies to the whole Z1 package. It's a car from the left-field, so there's not a

great deal of point in comparing it with any rival, either at the time or now with our 'classic' spectacles on. It does what it does; looks like nothing else, and dishes up a drive that gets more enjoyable the more you experience it.

While we don't have the weather today to truly maximise those sensations, it seems obvious to me that the Z1 is an esoteric sort of experience – a car that appeals to someone who thinks deeply about the package of talents it offers, and what it represents,

and simply wants one. If the only real Achilles' heel of the Z1 was its lack of outright performance, then this Hartge conversion neatly slays that criticism in one lunge of acceleration – doors open or closed ○

Thanks to:

The car's owner and Gordon Ince at Birds Garage – www.birdsgarage.co.uk or 01753 657442 – this car has now sold, but contact Birds for any enquiries on other stock.

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Vitamin C

Top dog in the non-M E30 line-up was the sublime Alpina C2 2.7 and this glorious example that has been painstakingly restored by Alpina GB must be one of the best in the world

Words: Bob Harper Photography: Dave Smith



There's something about the E30 that's just so right – it's one of the icons of BMW's past and it seems almost impossible that it's now nigh-on 23 years since the last examples rolled off the production line. No BMW fan worth their salt can argue against it being a turning point for the company – it moved the game on significantly from the E21 and became a virtual blueprint for what we expect of a modern era BMW. Back in the mid- to late-'80s it was the darling of the red-braced, Filofax-clutching, oversized mobile phone wielding yuppie, but even this didn't seem to put folk off yearning to own one.

No matter which version you're talking about the

E30 has an intrinsic quality that flows from its every pore; from the way the electric window switches operate to the silky smooth steering column stalks, it exudes a wonderfully engineered feel. Each and every one of the major controls, from the clutch to the brake pedal to the well-balanced throttle to the steering, all have that same engineered feel and operate as if they are perfectly lubricated. As an exercise in tactility the E30 is just about perfect.

Over the years the E30 has also become the darling of the modified BMW enthusiast and just about every BMW engine you care to name, from the humble M50 through to the more exotic S50 to the outrageous S85 V10, has found its way under the

car's delicately sculpted bonnets with varying degrees of success. These days, though, the E30 is also being dragged by its rusty scuttle panel into the realm of the classic car world. And with good reason. It doesn't matter which version you covet, two- or four-door, Convertible or Touring, they're all sublime machines and have a strong following these days. Obviously the bonkers nature of the classic car bubble has made the motorsport icon that is the E30 M3 into an obscenely overpriced irrelevance for all but the very well-heeled or those who were lucky enough to hold onto them when they were just a secondhand 3 Series but there are still plenty of other E30s worth coveting.

If you've not had a look at used values of E30s

There's plenty of torque from the enlarged M20 unit and the engine feels hugely flexible and unburstable





recently then you could be in for a bit of a shock when you go looking, as they're definitely on an upward spiral with the larger-engined machinery now fetching pretty good money. While you'd have thought that the ultimate E30 is the M3, many actually prefer the way the six-cylinder cars drive, with their torquey six-cylinder engines providing a less frenetic experience than the all-or-nothing S14 in the M3 which doesn't really do all that much below 4000rpm. Fine for when you're chasing apices, but less relaxing when you're simply cruising. And of the six-cylinder variants it's the Alpina models that are perhaps the most coveted. After all, BMW made thousands and thousands of 325is but Alpina only made a few of its take on the ultimate E30.

But which one of Alpina's E30s was the best? Its model line-up ranged from the C1 2.3, through the C2 models to the larger-engine B6 2.8- and 3.5-litre examples, with the ultimate incarnation perhaps being the B6 3.5S based on the E30 M3 and packing 260hp of straight-six goodness. That latter car is ultra-rare though – just 62 were built – and all were left-hand drive. A better bet would be one of the less extreme models – still desirable, made in small numbers, and perhaps most crucially, offering something a little extra in the way of performance

than what was available at the time from BMW itself. While the Alpina 2.3- and 2.5-litre machines were pretty decent they didn't offer a huge amount over the 323i or 325i so in the middle ground of the Alpina E30 range are the 2.7-litre machines, initially badged as C2s in both Germany and the UK before the German market machines took on the B3 moniker in the latter part of 1987.

No matter which version of the C2 (or B3) 2.7 you talk about, all shared the same basic engine architecture using BMW's small-block six-cylinder M20 engine as a base. The block used was the same as the 2.7-litre 'eta' engine used in the E28 525e which shared the 325i's 84mm bore but had a longer stroke at 81mm, but the magic came from Alpina specific changes such as Mahle pistons and a reworked head, along with a tubular manifold and a reprogrammed Motronic system. These extensive revisions completely changed the character of the unit from the low-powered, torque-rich eta to a much higher-revving sporting unit. Power was up to 210hp at 5800rpm while torque was rated at 197lb ft at 4500rpm – gains of roughly 25 and 20 per cent respectively over a contemporary 325i. Alpina claimed a 0-62mph time of 6.9 seconds which looks to be just about spot on as *Autocar* tested the first UK example built and found

its 0-60mph time to be 6.6 seconds.

Interestingly the example tested by *Autocar* was actually the very first C2 2.7 produced, lovingly assembled by Alpina GB's technicians from parts supplied by Alpina in Buchloe. Naturally enough the transformation to full C2 2.7-spec involved more than just an engine swap, with the new car receiving specially tuned springs, Bilstein dampers, a limited-slip differential and Alpina's aerodynamic addenda. There were the trademark 20-spoke 16-inch alloys – initially seven inches wide all-round, but as on the example we have here today a staggered set was generally fitted with wider eight-inch rears. Inside there was an Alpina steering wheel and wooden gear knob and the production plaque but after that it was up to the individual customer to decide how far they wanted to go with their interior embellishments.

So what about the stunning example you can see here? It's one of the UK-built examples produced at Sytner Nottingham, home of Alpina GB, and was built when it was new by its top technician, Mark Adkin, who assembled the best part of 250 Alpinas during his tenure there between 1983-1989. This particular C2 must now be one of the best in the world as it's been subject to a full restoration and is absolutely gorgeous. Having been brought up on this generation



of machinery when I worked in the dealer network back in the late 1980s this C2 brings the memories flooding back and I'm almost expecting that new car smell when I unlock the driver's door and slip into the cockpit. It's not actually that far off – thanks to the recently trimmed leather cockpit – and twisting the key and hearing the straight-six erupting into life with its familiar burble keeps me firmly planted in the 1980s. But before we get onto how this remarkable example drives we should really have a quick look at its journey towards being one of the finest C2s on the planet.

It's probably fair to say the story started almost two years ago when Alpina GB recreated an E21 (the first generation 3 Series) C1 2.3 which attracted a huge amount of interest, not only from marque fans but from paying customers, too, with Alpina turning down some pretty substantial offers for the car. With the continued growth of the classic car market the folk at Alpina wondered whether there was actually a business case for buying older Alpinas in need of refurbishment, restoring them back to as-new condition and then selling them, and the C2 was the first of these projects. And the icing on the cake was that Alpina managed to secure the services of its former employee, Mark Adkin, who had originally built the cars when they were new. Who better to restore a 1980s UK-built Alpina that the man who had originally created the car?

Since he left Alpina Mark has been involved in many automotive projects, from working for Porsche to restoring super-rare rally cars of the 1980s to building F3 engines, so he really was the ideal person to tackle the restoration. Once the car had been sourced Mark set about stripping it down in Alpina

GB's workshops and despite the reputation the E30 has garnered for being a little rust prone he was amazed at the overall condition of the shell, as he explains: "It was very good with virtually no rust – it just needed a little bit of welding around the front jacking points, which is a common place for E30s to rust. The rest of the car was absolutely fantastic. We did a full strip on it, everything came off – engine, gearbox, all the brake pipes, all the fuel pipes, fuel tank – everything was taken off it and I undersealed it all and put it back to what it should be. It was absolutely immaculate. I was rather surprised quite how good it was – one of the best ones I've seen."

Part of the reason for its excellent overall condition was its low mileage – it was still showing less than 70k miles when we tested it – and the fact that it had been dry stored since 1998. Quite often when taking on this sort of restoration one can find that parts availability is a problem but Mark was able to source everything he needed from BMW – including new brake pipes that he painstakingly bent and fitted (they come from BMW in straight lengths), but he was adamant about using OE parts as he reckoned that if you make them yourself they never look original or quite right. Just about the only part he was concerned about was the tubular exhaust manifold, as Mark explains: "I think the only thing we were worried about was the exhaust manifold as they're like finding hen's teeth new these days but this one was in reasonable condition so we sent it away to a company called Zircotec. I've used it several times in the past for coating and it does a brilliant job. The coating keeps 50 per cent more heat inside the manifold so you get less heat in the engine bay, too."

Mark was expecting to need to rebuild the engine,

but when he took it out and inspected it he was amazed by its condition: "I had a look inside the engine when I got that out and it looked perfect. It was the same with the camshaft; the compressions on it were good and the cylinder leakage test on it was unbelievable. I think the worst was six per cent out, which is fine – especially when you consider you expect four to six per cent on a new engine!"

Naturally enough Mark completely refreshed the suspension with new springs, Bilstein dampers and new bushes where required, the steering rack was checked and thoroughly cleaned, the propshaft was removed and sent for specialist examination and returned with a clean bill of health... by now you should be getting the picture that if it could be removed and checked it was! The brakes also came in for attention. "I took the callipers off, totally stripped them down, put them in a blaster, cleaned up the pistons, fitted new seals and they're now absolutely like brand-new... basically it's a brand-new car, or as good as you're going to get!" Mark says with a grin.

As I mentioned earlier the interior has also been given a refresh; air conditioning has been retrofitted and the leather has been redone, too. Mark explains how this happened back in the day: "The basic car that arrived with us was just a bog-standard, steel-wheeled, standard suspension, plastic steering wheeled, cloth interior 325i. If the customer wanted the Alpina interior we had a local guy who used to do the retrimming for us – he actually did the interior on this car even though he's semi-retired now. He did it when it was new and has now done it again for us, which is a nice touch. Basically whatever the customer wanted we built it for them so virtually every one I built was slightly different."



E30 Alpina C2 2.7

ENGINE: M20 Six-cylinder, SOHC 12-valve

CAPACITY: 2693cc

MAX POWER: 210hp @ 5800rpm

MAX TORQUE: 213lb ft @ 4500rpm

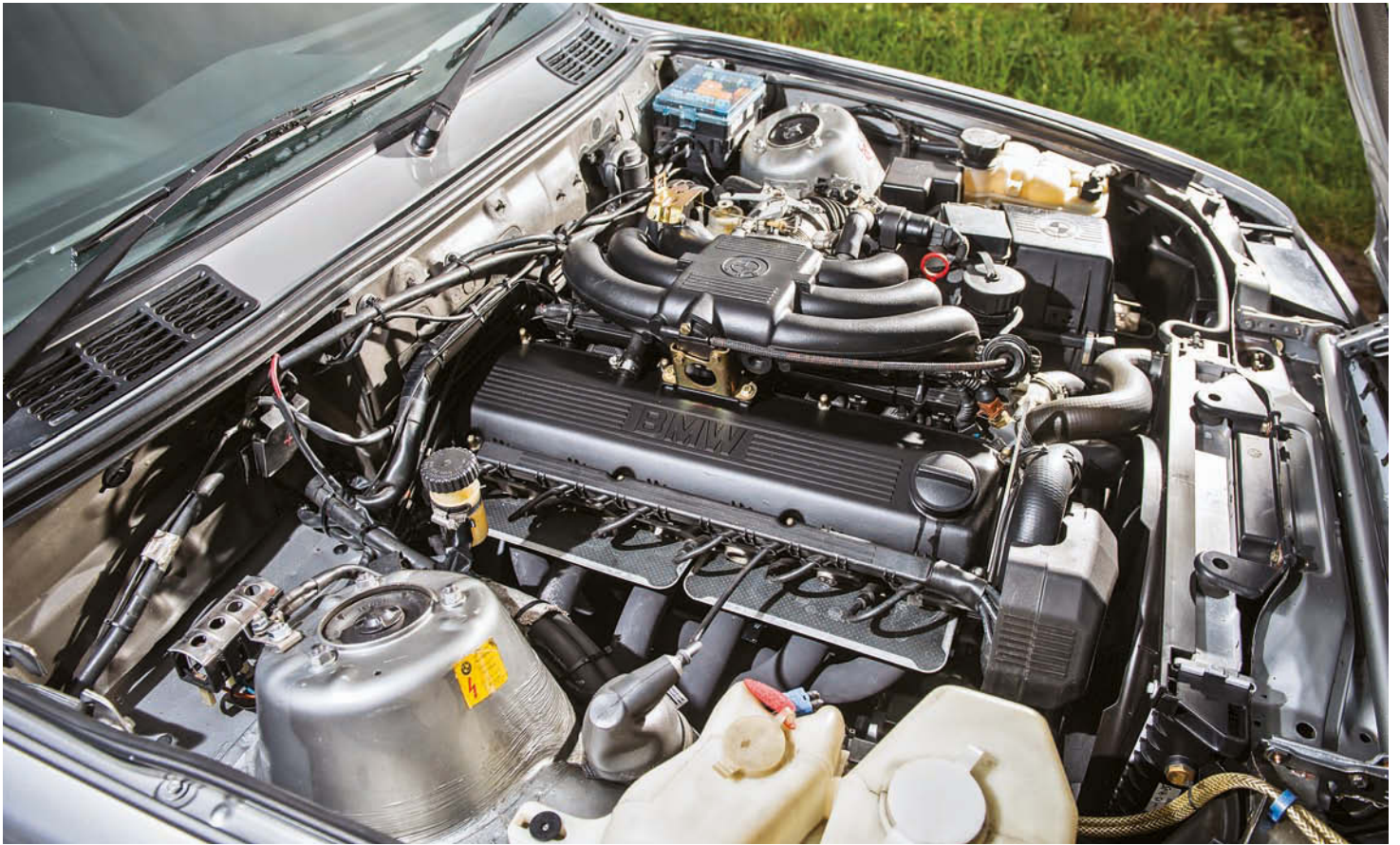
0-62MPH: 6.9 seconds

TOP SPEED: 143mph

ECONOMY: Approx 22mpg

WEIGHT: 1300kg

PRICE: £27,000 (1988)



**“Basically it’s a brand-new car,
or as good as you’re going to get!”**



Other nice touches in the interior are the dials which now sport red needles. Mark fills us in on the background of this: “The painted needles on the dials were an optional extra – the customer could basically choose to have them or not. From what I can remember when the very first M3 came out Frank [Sytner] saw it and said, ‘oh, they’re got red needles; why don’t we paint ours red?’ We put the Alpina lettering on all of the dials and then if the customer wanted the needles painting red then I’d do that as well, stripping the dashboard down. It took about a day to do that. The worst thing was that if you didn’t let the paint dry properly before building it back up the speedo used to stick on the bottom stop. You’d be driving down the road registering zero miles per hour until you got to about 40mph when all of a sudden it would jump up! You had to be absolutely certain it was completely dry before building it back up and if you put too much paint on again it would affect it, with the speedo reading too low so you had to be very precise when painting those needles!”

From talking to Mark it’s clear that this C2 has had a significant amount of time, love and affection – not to mention money – thrown at it over a seven or eight month period and it didn’t take long for it to find a new owner. A customer who was actually looking at buying a new car popped into the showroom and virtually bought it on the spot! Kindly he’s returned it to allow us to have a drive in it and as I mosey out of Sytner’s Nottingham HQ I think I’m actually more nervous about damaging this machine than virtually any other new BMW or Alpina I’ve driven recently.

In the event I really shouldn’t have worried as the car is so easy and enjoyable to drive. The clutch bite point is perfect, the throttle response is silky smooth and the brake pedal has plenty of feel and just the right amount of travel. And, of course, compared to a modern car the E30 feels absolutely tiny so you always feel like there’s plenty of space around it. Threading it through traffic out of Nottingham is a joy and as confidence grows you almost start wanting to dive into gaps left by slower moving traffic – it just

feels so wieldy and taut in its responses. Fortunately it doesn’t take long to get out of the city centre and as soon as I’m on more flowing, less congested country roads the C2 really comes into its own.

The whole car feels completely solid as if it’s been hewn from a single piece of steel and finely honed, and now I can use a few more revs and explore the performance it’s easy to see why the motoring press of the day generally raved about the C2. Rapid progress is easily made without breaking into a sweat – there’s plenty of torque from the enlarged M20 unit and the engine feels hugely flexible and unburstable. Floor it at 60mph in fifth and it accelerates rather briskly thanks to its excellent spread of torque. Drop it down a cog or two and it really flies, and bearing in mind that as this machine is someone else’s pride and joy I was by no means using all the revs either.

It’s not all about the car’s straight line go though as the chassis feels wonderfully balanced and seems to have perfect poise. On some pretty undulating and bumpy straights the suspension absorbs everything



A new Alpina exhaust came with the car and sounds absolutely glorious; period decals look wonderful



you can throw at it, even when the speed picks up, and compared to today's stiffly-sprung BMWs there's real compliance here, leading to an excellent ride quality yet without feeling soggy or under-damped. Add some faster sweeping corners into the mix and it again feels perfectly planted with just the right combination of body roll and grip. And while the standard E30 rack does call for a fair amount of arm twirling in the tighter corners you're never in any doubt as to what the front wheels are doing thanks to the feelsome mechanical rack.

In short it feels wonderful. Yes, I'm sure you'd be travelling much faster and far more economically in a 120d but you'll be having much more fun in the Alpina, and with a classic it's not about the speed but the enjoyment. And there are few more joyous ways of spending a day than punting around the Nottinghamshire back roads in this C2 2.7 – it's a testament to the car's original design and the man that both built and rebuilt it. Find another and we're pretty sure he'd do it all again... ●





Southern Comfort

This glorious 328 is the only one in the southern hemisphere and is still exercised on a regular basis as Chris Nicholls recounts
Photography: Chris Nicholls



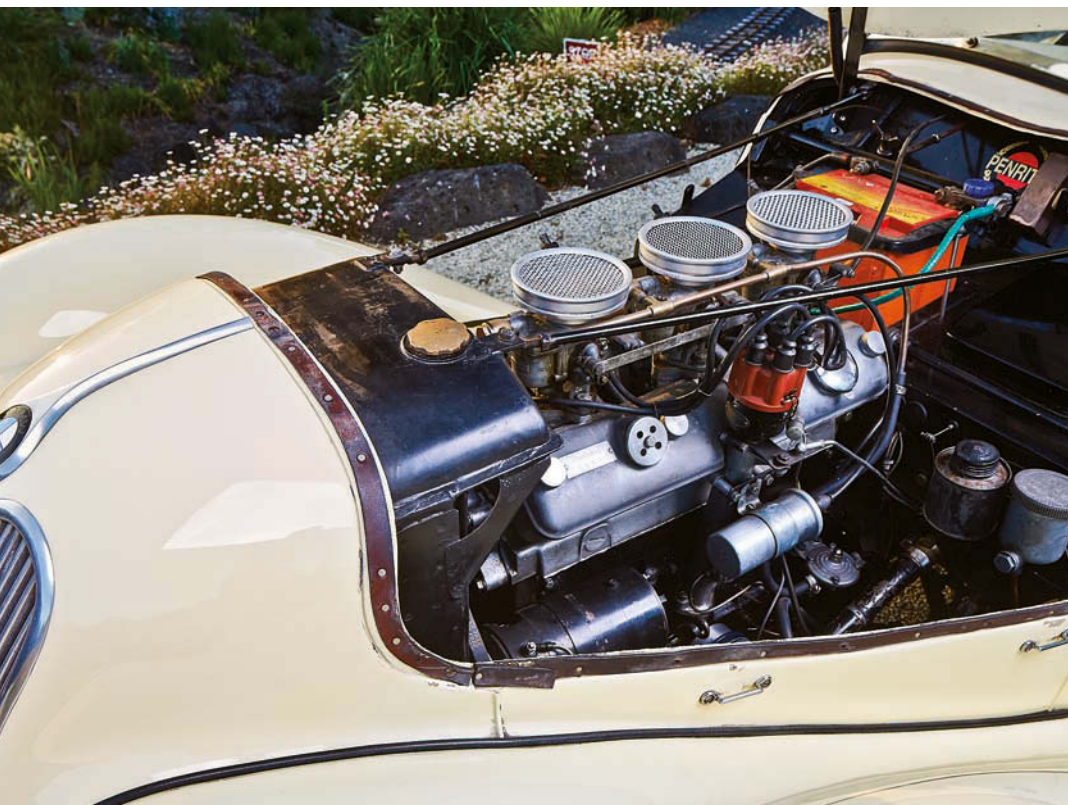
It's a beautiful sunny spring day in Melbourne, Australia, and the warm breeze blows through my hair. All around people are looking, waving and smiling. My cheeks hurt from the permanent grin I've been wearing since we started out towards our shoot location. This is the joy of driving in its purest form. This is what the 1938 328 can give you.

Designed in an era of classical fussiness, the 328 stood out for its clean, simple design. Not for the rational Germans the highly decorated and adorned surfaces of its rivals. Neither the pretty but impractical design touches that made others harder to work on than necessary. This was German design in its purest form and a symbol of what BMW would go on to be famous for – simple beauty and a focus on the very best driving experience.

Funnily enough, the 328, despite its inclusion as one of the 'Cars of the Century' by a mix of experienced motoring journalists, has always been seen by many as actually *too* good to have a soul as a result. Its immense practicality, highly influential engine and excellent handling meant it lacked character to some.

This is of course rubbish. I defy anyone to climb in, go for a drive and not come away with an insane grin. The roar of the triple downdraught Solex carb-equipped 1971cc OHV straight-six at full bore, the rock solid mid-corner grip and availability of throttle-





This 328 gets regularly exercised and is a hoot to drive thanks to a sports camshaft and 100hp

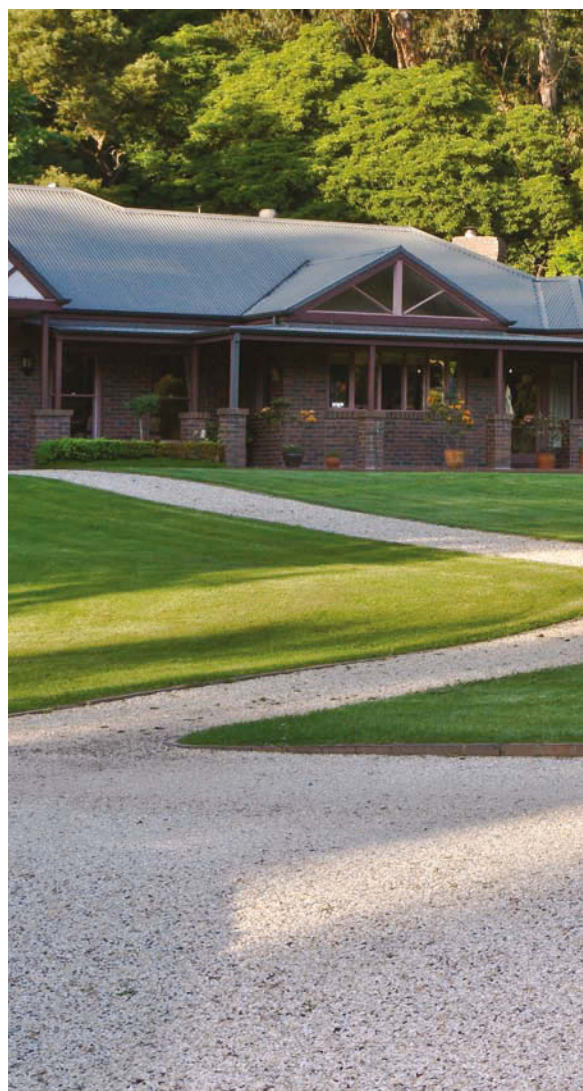
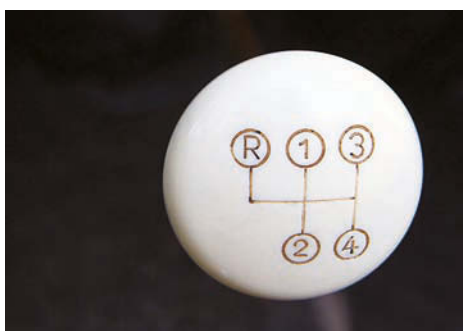


induced oversteer even in the dry is a fantastic combination, and that's before we get to the pure pleasure of driving such an iconic car in modern day traffic. Yes, you have to deal with the actual traffic itself for a little while, but even then people just love seeing such cars on the road, and the joy you give them is a part of what makes driving a classic sports car like the 328 so special. And once you get to the twisties, you really see where BMW's famous DNA came from. There's a hint of initial understeer (mainly due to the tyres), then balanced mid-corner poise and the aforementioned twitch of the tail on command as you exit. The engine never feels weak on the straights either, even by today's standards. Admittedly this example is running a sports cam and puts out a resulting 100hp or so, as opposed to the 80 it came with from the factory, but even in standard form, with only 830kg wet weight to push around, this car wouldn't have hung about.

The race results show just how effective a sports car the 328 was in its period, too. As many readers will no doubt know, the 328 came first in class at the Eifelrennen at the Nürburgring in 1936, then went on to take over 100 class wins in 1937 before winning its class at Le Mans, the RAC Tourist Trophy, the Alpine Rally and the Mille Miglia in '38. By the standards of the day, it was a rocket ship, and the fact current caretaker, Ken Bedgood of the Penrite



The interior is in remarkable condition with the perfect patina; plenty of lovely details too, such as the stylish gear knob



I defy anyone to climb in, go for a drive and not come away with an insane grin

Collection, has had it down the standing quarter at 17.2 seconds highlights that fact.

Remarkably, as mentioned earlier, for all its speed, it's still a very practical car. The boot, while it lacks rear access, is cavernous, and fitting in all my camera gear (and there was a lot) was easy. It could have held more, too. The rear-hinged 'crocodile' bonnet and quick-release clasps on the leather straps mean working on the engine is a breeze, and even the seats come out with a simple tug to ensure you can sit and enjoy a picnic without ever getting your clothes dirty.

Of course, the completely unsecured seats, scalloped doors, lack of belts and the enamelled dashboard being only a small distance from your chest means should something bad ever happen, you're probably toast, but that's part of the thrill. Plus, you're likely to be driving this a bit more carefully than your average family hatchback anyway.

Having said that, this particular example gets driven with some enthusiasm on a regular basis, thanks to Bedggood's philosophy that cars are meant to be used. A former champion rally driver here in Australia and manager of the Team Penrite historic racing team when he's not running the museum and building/maintaining the cars, Bedggood has both the skills and experience to handle machines like the 328

and should he ever get hit by someone when he's out driving, he at least has the skills to repair it himself, being a qualified fitter and turner.

The fact this 328 does get driven almost everywhere is perhaps all the more remarkable when you consider this is the only one in the southern hemisphere. That's right, of the 464 produced, this is the only remaining example south of the equator, and probably one of only a couple of hundred left running. (there was one other here for a while, but that was on loan to BMW Australia from BMW Welt, and has since gone back). It's so rare that Bedggood says he's had 'ludicrous' offers for it in recent years, but thankfully for Australians, the owner, Penrite Oils CEO John Dymond, has no intention of parting with it.

"Because all the Europeans have been buying them up [in recent times], we have so few of these classics here in Australia any more; we have to keep the ones we've got. I mean, I understand those who do sell, as it's basically their retirement fund, but we've got to hold onto some, otherwise what's going to happen to the next generation? We can't pass on that passion," says Bedggood.

That's why he takes it out as often as he can. Whether it's the Geelong Speed Trials, where it ran its 17.2 quarter, or the famous Phillip Island Classic,

where it competed in the regularity field a few years back, Bedggood ensures it get used as intended. Just a few weeks after this shoot, it went out in the Breast Cancer Foundation Rally, and later in 2016 it will be in the parade contingent for the Clipsal 500 V8 Supercars season opener in Adelaide.

Sadly, due to a small oil leak, it's likely not going to be driven interstate for that, but the very fact it gets driven almost everywhere else is almost a miracle, and definitely something car lovers in Australia should be grateful for. It's also something that shocked BMW Australia when both this 328 and its example turned up at one show together. "It's funny, we took it to this event once and the employees from BMW Australia trailed theirs in a covered trailer and we just drove all the way there and they looked at us when we arrived as if they were like 'what are you doing?!'"

Not that all this driving doesn't have risks. Bedggood relates another story where the team was invited to show it off as part of the historic parade at the Melbourne F1 Grand Prix one year, and only realised when they got back to the pits that the fuse box cover had come off mid-lap.

"I thought to myself, 'oh no! Where am I going to source a genuine Bakelite Bosch fuse cover from 1938?' but afterwards, a marshal came up to me and





This particular example
gets driven with
some enthusiasm
on a regular basis





Plenty of original equipment remains intact on the Penrite 328 such as its factory tool kit



1938 328

ENGINE: 1971cc OHV straight-six based on 326 block (66mm bore, 96mm stroke). Alloy head, 7.5:1 compression ratio, inclined inlet valves operated by pushrods and rockers, exhaust valves operated by secondary pushrods and rockers, triple downdraught Solex carburettors, sports camshaft, 100hp (estimated), 80hp (standard)

GEARBOX: Volvo Amazon all-synchro four-speed with added overdrive (Hirth four-speed originally)

CHASSIS: Tubular ladder-frame steel with aluminium body panels

SUSPENSION

FRONT: Independent by transverse leaf spring, lower wishbones and hydraulic dampers

REAR: suspension: Live axle, semi-elliptic springs and hydraulic dampers

BRAKES: 280mm hydraulic drum brakes. Automatic footbrake adjustment

TYRES: Dunlop Racing 5.50-16



said "I think this came off your car just near where I was marshalling" and handed it back to me. Unbelievably, it was in perfect condition."

Indeed, the whole car is in remarkably good nick, considering its age and history. Previously owned by Chris Browning in the UK, current owner John Dymond came into it after Browning sadly fell ill with cancer and passed away. Dymond, a close friend of Browning, always talked to him about wanting the car, and Browning agreed to it before he passed. It then competed in a Frazer Nash Rally to Milan before being shipped to Australia and has been used regularly ever since. Even after all that, mechanically, the only issue right now is the aforementioned slight oil leak, which will no doubt be fixed, and the fact the alloy head already has 36 welds holding it together. Ideally, Bedggood would like to keep this part original, but has a Bristol head waiting in the workshop should he ever need it, as spark plug sizes aside, they're identical (for

those who don't know, the Bristol engine was based on BMW designs taken by BAC and Frazer Nash representatives from the bombed factory after World War II). And given the car already had an overdrive-equipped Volvo Amazon synchro box – a common and highly regarded upgrade over the fragile stock Hirth 'box that, uniquely among other options, bolts on with no body modifications – fitted prior to Dymond's purchase (the original came with it too), matching numbers is not so much of a pressing issue. At least the ultra-purists will be happy knowing the original toolbox is still intact. And in a lovely touch, the Victorian number plate is actually the same as the one it wore in the UK.

Aesthetically, the wonderful cream paint outside is almost entirely unblemished, apart from a patch missing on the bonnet due to the straps not being done up properly prior to a road rally and the bonnet flying up and hitting the windscreen, and a bit of

peeling around the now useless crank handle hole (the car was converted to 12 volt electrics while in the UK). Inside, a paint chip at the bottom of the dash and around well-used knobs and one of the VDO gauges is about all you can see. The unusually plain Bakelite three-spoke wheel obviously has some marks, but overall, it's a stunningly well-looked after machine. It really is testament to the care Bedggood and the other museum staff impart.

Machines like the 328 are, by definition, rare. Not just because of the limited production numbers and scarcity down under in this case, but because cars that get things this right only come along once in a proverbial blue moon. Whether it's style, performance, handling or ingenious design, the 328 ticks all the boxes, and car lovers should be grateful such cars still exist, let alone get driven and put on show regularly like this one. It's a source of pure joy, and my time with it was an experience I will never forget ●

E24 635CSi

The 635CSi is a wonderful beast and still relatively affordable to buy, grab one while you can and revel in shark-nosed automotive nirvana

**Words: Bob Harper and Andy Everett
Photography: BMW and Craig Pusey**

Has BMW ever produced a better shape than the E24 6 Series? To us it encapsulates just about everything that was so right about the company's design direction in the 1970s and as well as sharing a strong family DNA strand with the E21 3 Series and the E12 Five (as well as the E23 Seven that made its debut just after the Six) it was suitably aggressive for the company's sporting range-topper. The E24 had big shoes to fill, following on from the iconic E9 CS/CSi coupés that had culminated in the wonderful CSL, and while the Six was bigger and heavier it did garner almost universal praise when it was originally launched in the UK as the 633CSi – the 630CS didn't make it to these shores.

These days the 6 Series is starting to ride the swell of the classic car tsunami and while the non-M versions are unlikely to head for the stratosphere as

far as pricing is concerned any time soon, they do make a very viable proposition as a classic car that can be enjoyed without breaking the bank. You do need to be wary though, as now prices are starting to creep up there are many at the unscrupulous end of the spectrum who are looking to make a quick buck by tarding up some well past their sell by date examples. A Six does have the ability to swallow up huge amounts of your hard-earned so the last thing you want to do is pay top dollar for something that's actually a bit of a basket case.

We're going to concentrate here on the 635CSi – that's not to say the lesser-engined machinery aren't noteworthy, it's just that running costs will be the same for all models so you might as well bag the one that offers the best performance on offer. While the E24 made its debut in 1976 the range-topping 635CSi didn't arrive until 1978, but it was worth the

wait as the additional power and torque that the biggest version of the M30 straight-six offered over the 3.2-litre version in the 633CSi endowed it with better performance, improved economy and further refinement. The 3453cc engine developed 218hp at 5200rpm and 229lb ft of torque at 4000rpm, good enough for a 7.6 second 0-62mph time for the five-speed manual version, although the automatic version was initially considerably slower at 9.1 seconds.

The shape that had been penned by BMW was built by Karmann and for the 635 its delicate lines were added to with a deeper front spoiler and a large wedge-shaped item that sat on the bootlid to improve aerodynamic efficiency. It wasn't a cheap machine by any means, costing £16,499 at the beginning of 1979, just after UK deliveries had started. It wasn't fully loaded either with items such as air conditioning (£1051), electric sunroof (£562) and headlamp wash



wipe (E161) being optional extras. You even had to pay an additional £60 for an electric mirror on the passenger's door!

The motoring press of the time was impressed though with *Autocar* saying: "The BMW will find favour with the man who ranks style as important as performance, and who prefers a vestige of sporting sound to total refinement; it is a worthy contender here, practical and very satisfying to drive."

The first main change that occurred during the Six's 13-year production run (the longest of any BMW incidentally) was in 1982 when the big coupé moved over to using the underpinnings from the E28 5 Series which brought about improvements to handling and road-holding, and drivability too, thanks to the introduction of Digital Motor Electronics and the 3430cc version of the M30 'six. At the same time the rear bumper was changed too, now featuring a more

delicately shaped three-piece chrome item that wrapped around from the rear or the rear wheel arches. Inside, the dash layout changed with the adoption of the now classic BMW traditional equal-sized speedo and rev counter – previously it had featured a central speedo with a smaller rev counter and combined fuel and temperature gauge either side of it. A new three-spoke steering wheel was adopted, a service indicator was fitted and the check control system was updated.

There were a couple of changes worthy of note over the coming years, mainly centred around the transmission; 1983 saw the introduction of the ZF four-speed automatic unit and in 1984 the ZF 4HP-22 switchable unit was adopted.

The most major update that occurred during the Six's lifetime was the fitment of US-style impact bumpers in 1987 which also brought the more

modern ellipsoidal headlamps to the party too. For the 1988 model year (so from mid-1987 production) the Six also benefited from the E32 735i's engine with 220hp. All UK Sixes now came with the larger metric TRX rims fitted with 240/45 415 Michelin rubber and inside the dash, door trims and centre console were swathed with leather. Air-con was standard as were electric seats. These later machines were what are now known as the Highline cars. The last model to be considered was the UK Highline Motorsport Edition. These were equipped with all the standard features of the Highline plus the shadowline exterior trim and M logos on the seats. They were available in three colour and trim combinations; Misano red with black Nappa leather, Nogaro silver with black Nappa leather and Macao blue with Lotus white Nappa leather.

The final Six rolled off the production line in 1989, but some machines were registered as late as 1990.

Buying one

There are plenty of things you need to decide when contemplating the purchase of an E24, and the first of these will be whether you want an early car ('78-'81), an '82-'87 machine, or one of the last of the line Highlines. The original shape cars are now becoming quite hard to find in a decent condition and we reckon the '82-on machines with their wrap around bumpers are actually considerably better looking. Combined with their E28 underpinnings they're probably a much better prospect.

If you want one with all the bells and whistles and the luxury of having a leather-clad cocoon of a cockpit then you'll be after a Highline. Which model will be worth the most is anyone's guess so the best advice is to buy the one you like best rather than trying to second guess what the investment market will eventually decide is the most desirable.

Once you've done that then there's the question of manual or automatic, with the former being much rarer and significantly more sporting, the latter endowing the car with a more of a cruiser quality. Either is a fine choice, but for the really keen driver it might be worth hunting out one of the very rare cars that was spec'd from new with the dog-leg five-speed manual. In conjunction with a limited-slip diff this really transforms the car's behaviour. Seats might also be a cause for consideration too. Many

cars have the flat 'armchair' style items which offer about as much lateral support as a damp paper bag – comfy for cruising though... Then there are the BMW sports seats which offer the keen driver much better support, but for the ultimate hip-huggers you'll need to find a machine with the rare Recaro option.

While all these decisions are important by far the greatest consideration is the car's overall condition. Sixes like to rust. And rust a lot. And they like to hide a fair bit of it too, so if you don't know what you're looking at we implore you to get any car inspected

by a marque specialist who will know the known weak points. Look at as many as you can to get a feel of what they're like to drive – there are plenty out there so there's no excuse for ending up with a basket case unless you really want to embark on a ground-up restoration.

Prices start at around £2000 for a car needing a lot of work and rise to around £20,000 for an immaculate machine with no faults. We wouldn't want to pay more than that though as at that price point the rarer and more collectible M635CSi should be on your shopping list.



Body

The main problem with the E24 is rust and there are very few that have not seen some bodywork in the past. It strikes just about anywhere and the front wings are the obvious and well-known problem. There is a reinforcing bracket spot welded to the inner wing flange and rust starts here, and when rust bubbles appear on the front of the wing above the bumper, the game is up. Wings can also rot along the top edge. New wings are in short supply, are BMW only and around £1300 a pair new. They can be repaired but need to be removed and grit blasted if the repair is to stand a chance. Front inner wings rot where they meet the front panel in the engine bay and under the arches along the top wing mounting rail.

The roof and scuttle are generally okay but beware any bubbling on cars with a sunroof – that's virtually all of them. Sills rot of course and more at the back by the rear axle mountings –

repairs here are very expensive. Rear arches rust but the doors, bonnet and bootlid are generally okay. Front chassis legs need examining and the steel front bumper shell on pre-1988 cars is both complex and rot-prone. Chrome bumpers are of course very expensive and are in fact chromed covers on a steel shell.

The face-lift cars built after April/May 1982 (full length wrap around rear bumper) have different front wings with wider arches and different doors with revised inner shells to accept E28 style door inner handles. The sunroof mechanism is all different as well but the bonnet, bootlid, screens and lights are all similar although Highlines have different E34 style headlamps. Highlines have plastic arch spats fitted. Strictly speaking, post '88 cars (big bumper) with satin black trim are Shadowline and cars with stainless bumpers and trim are Highline models.



Wheels, tyres and brakes

From late 1980 635CSis were fitted with the Michelin TRX metric tyres on special metric wheels and their ideal use is as a plant pot. Both the earlier 390 and later (Highline) 415 tyres are around £1400 a set and they just aren't worth it. Replace them with a set of either E34 15-inch or E38 16-inch BBS style cross-spoke alloys with either 225/55 R15 or 225/50 R16 imperial tyres. Pre-1980 models have 14-inch wheels with 205/70 tyres that present no problems, and from May 1988, the 635CSi was available in



Interior

Most cars have leather and there are three types of seat – standard seats, BMW Sports seats and the Recaros with the big side bolsters – the latter are rare and sought-after. The leather lasts well but you may find an early car with cloth or velour trim. The on board computer often needs a new bulb but beware any instrument panel problems on post '82 cars. These have a circuit board with two small rechargeable batteries to control the service indicator system. These leak acid on to the board and ruin it – a new one from BMW is a frightening sum but a good used one from an E28 5 Series will fit. Unlike the E28 though, the cluster is a swine to remove that involves dropping the steering column. Not all Highline cars have the full leather dashboard – many early ones (mainly E registered) still had the plastic dash.

Really, the interior is the least of your worries when looking for a good E24. A worn steering wheel is fairly cheap to replace as they were the same as E28 ones. The circular push button hazard light switch on earlier cars was shared with the E21, and they have been known to short out internally and melt themselves. New ones are available again and it's not a bad idea to fit a new one.



mainland Europe with the E34 15-inch BBS wheels as standard with the TRX wheels becoming an option.

Brakes are now a potential problem on all cars. Pre-May 1982 E12 type cars had the dreaded twin servo E12 brakes that are becoming a liability. With a standard steel bodied master cylinder and two remote servos, the servo seals fail and leak fluid into the bellows. As new ones are NLA, the only answer is to replace them with new servos from something else such as an MGB but only as a pair. Later cars

had the E28 hydraulic booster. This is a system where conventional brakes are assisted by hydraulic pressure from the PAS pump via a ram and a pressure accumulator sphere. Common problems are soft or rock hard pedal (failed sphere), sticking brakes (seized cross linkage), seized callipers and a failed pressure ram between the bulkhead and master cylinder. New spheres are cheapest from C3 BMW who supply genuine ATE parts for a lot less than BMW. Sticking callipers are often blamed but it can

often be faulty brake hoses that are healing up internally – just replace them all at this age.

ABS is also a potential headache – the ECU can be damaged by jump starting while an ABS light that comes on over 50mph can be rusted trigger rings on the rear drive flanges – about £300 to supply and fit new rear hub rings. You can buy these (around £35 each) from reluctorrings.com and, if all goes to plan, about three hours work to replace. They are listed as E28 M5 rings but they are all the same.

Steering and suspension

Another area where a lot of cash can be consumed to make an E24 drive properly. Pre-May 1982 build cars have E12 5 Series suspension and steering, and cars built after that use E28 stuff. On all cars, the dampers and springs must be good but can hide a nasty trick – the front strut spring cups rot out, seriously weakening them to the point of collapse – give them a workout with a hammer to find out how bad they are – if they are heavily rusted and flaky, budget for two new ones at around £500 each. Cars with ABS have a different strut to non-ABS cars and contemporary (E12 or E28) 5 Series struts are the same. At the back, the spring cup can also rust badly with the same results but are a lot cheaper to replace.

The steering linkages and upper/lower front control arms are all liable to wear out leading to the infamous 55mpg steering wobble – also caused by sticking front callipers. The upper control arm inner bushes are the main culprit but complete Febi or Lemforder arms from ECP come complete with the bushes and are the same as the E28. Steering boxes wear out, but good used ones are cheaply and readily available. At the back, rear



axle beam bushes wear out leading to a wander feel and clonking over bumps – the rear pitman arms (often called 'dog bones') wear out leading to strange handling. On pre-1982 E12-based cars they are bolted on but are pressed in on the later E28-based cars and require special tools to fit.

Steering boxes wear out and apart from some light adjustment, a worn out one cannot be saved or rebuilt. On E28-based cars the mounting bracket on the front crossmember can also break off.

Electronics

There isn't much in the way of electronics on these cars. Apart from central locking and electric window problems (quite rare) we've already touched on the service indicator board instrument cluster problems and the OBC bulbs. Pre-1982 cars have the sunroof motor in the boot area with cables to operate the roof – start praying if that doesn't work.

Headlights are getting hard to find both new and used, and be aware that Highline headlights are different. Rumour has it that they can be rebuilt using E34 and E32 parts meaning a much cheaper repair. Some Highline headlight assemblies have E34 style plastic backing plates – much nicer than the rusty metal ones on older cars.

Central locking relays are shared with the E30 and not the E28 as you'd expect. Starter motors and alternators are of the quality you'd expect from the Bosch of old and many cars are still on the originals after 25 or 30 years. Parts such as engine ECUs and air flow meters are worth buying now and stashing away, as are heater fan motors as they're stupidly expensive.





Engine

The M30 is a great engine, but they are now old. The 3430cc unit in the post '82 635CSI the best all-rounder – pre-face-lift ('78-'82) cars used the 3453cc short stroke unit from the original 735i with Motronic from late 1980. Highline cars used a hybrid engine, combining the E34 535i crank, rods, pistons, cylinder head and a Motronic 1.3 engine management system with the older E28 type block – E34 units have different engine mounting lugs on the block.

The two main problems with the M30 are cam wear and overheating. Overheating is caused by a neglected cooling system – change the antifreeze every two years and ensure the viscous fan coupling is working by fitting a new one at the first sign of the car running hot in traffic. Fail to change the

antifreeze and the alloy head will corrode the waterways and cause a blown head gasket. The fan is very close to the rad on these cars, and many bear witness to this with a circular mark in the rad from the fan – this is due to soft engine mounts allowing the engine to move forward under braking, and most cars will need a pair of new ones if an expensive rad isn't to be ruined.

Cam wear is caused by a blocked oil spray bar or the two banjo bolts coming loose. These must be replaced at the first opportunity by the latest pre-threadlocked type from BMW that also have very slightly altered thread pitch to stop them coming loose – do *not* threadlock the existing banjo bolts yourself as it will congeal in the oil hole. Avoid cars with a noisy cam as removing the head to replace

the cam, rockers and the four short rocker shafts is a very big and expensive job – not much change from £2500 at the least. It now seems that only BMW sell new cams for these and whilst the cam isn't too outrageous at £406 plus VAT, the rockers are £40 each and the four rocker shafts £53 each – all plus VAT. With the head off for a cam swap, it would be worth replacing the very tame factory cam with something from Schrick or Cat Cams.

The bottom end of the engine is strong, but you'll find that really old ones won't like being driven too hard now. Timing chains were duplex until 1980 and single row from then onwards, but the later chain is very reliable. The pre-Highline Motronic 1.1 system is getting hard to find new and used parts for now. Carry a spare DME relay in the glovebox!

Transmission and drivetrain

Most 635CSI's are automatics. That means 3HP22 three-speeders until late '82 and 4HP22 four-speeds with the 55mph torque converter lock up after that. Late 1983 saw the EH electronic control being phased in. The three-speed auto is a tough old unit that takes some breaking but the four-speed is not as good. Rewinding in N or P along with long periods of idling will ruin the front drive clutch (leave it in D in traffic) while EH cars can have problems with the ECU and wiring connections – the 635CSI EH gearbox is not the same as a 5 or 7 Series unit due to differences in the wiring plug.

Manual cars are rare but worth having. Pre-1986 cars have the old Getrag 265/6 overdrive gearbox or optional 265/5 Sport unit with the 'dog-leg' gearshift available until the end of the chrome bumper cars in '87. After 1982, electronic speedos were used and the Getrag 260 manual box phased in on overdrive cars from late '85. The Sport gearbox is not always a very good unit – most have a worn out gear change mechanism, a rattly layshaft and, overall, the overdrive unit is much nicer. Diffs are massively strong and you won't break one. Pre-'82 cars have the old E9 style 'sideloader' diff that was a standard LSD on the manual 635CSI until mid-1980. Propshafts and



driveshafts are strong, but will wear out eventually – most cars will need a prop centre bearing and a doughnut by now. To convert an automatic to manual will be very pricey – reckon

on £1500 upwards. Highlines were given a 3.64 ratio differential, replacing the very tall 3.07 on pre-Highline models and as result the later car is somewhat more lively.



It encapsulates just about everything that was *so* right about the company's design direction in the 1970s

Verdict

E24s are still in that phase where there are more rubbish examples than good ones. They fell so rapidly from the dealer network and became badly maintained bangers and far too many of them have at least half of the faults mentioned above.

The best way to buy one is to find a low mileage example with a stack of invoices and pay for the privilege but these are few and far between. Lesser examples only make sense if you can do the work yourself – if you have to start paying someone else

to do all the work for you, then an E24 needing work will turn very expensive very quickly – you'd be surprised how quickly they can consume £2500 and then come back for more. And then some more...

If you're not mechanically minded, then you must pay an expert to examine the car in detail because a high price and wordy advert is no guarantee that the car is actually a good one under the gleaming paint and take it from us, an E24 can be one of the biggest money pits you'll ever own. However, a good

example is a great car. It's just that they are not really everyday 'all weather' cars anymore and they do require frequent and diligent preventative maintenance to keep them from becoming yet another stretcher case – it's imperative to nip problems in the bud. As for which 635 to go for, the Highline is probably a safer bet. It had a much better and more reliable engine management system, a lower final drive gave it better performance and the stainless bumpers don't rust.

E24 635CSi Coupé

	635CSi (1978-81)	635CSi (1982-87)	635CSi (1987-89)
ENGINE:	M30 six-cylinder, 12-valve	M30 six-cylinder, 12-valve	M30 six-cylinder, 12-valve
CAPACITY:	3453cc	3430cc	3430cc
MAX POWER:	218hp @ 5200rpm	218hp @ 5200rpm	220hp @ 5700rpm
MAX TORQUE:	229lb ft @ 4000rpm	229lb ft @ 4000rpm	232lb ft @ 4000rpm
0-62MPH:	7.6 seconds (9.1)	7.4 seconds (9.0)	7.4 seconds (8.4)
TOP SPEED:	138mph (133)	142mph (137)	143mph (139)
WEIGHT:	1480kg	1430kg	1460kg
PRICE:	£16,499 (1979)	£24,995 (1984)	£36,860 (1987)

Figures in brackets refer to automatic model

Servicing costs

	BMW DEALER	SPECIALIST
OIL SERVICE	£165	£120
INSPECTION 11	£485	£325
BRAKE FLUID	£81	£65
VEHICLE CHECK	£79	£80
FRONT BRAKE PADS	£207	£120
REAR BRAKE PADS	£212	£130

Service prices courtesy of Sytner BMW Sheffield (0114 275 5077) and a selection of specialists. Prices are inclusive of parts and VAT.

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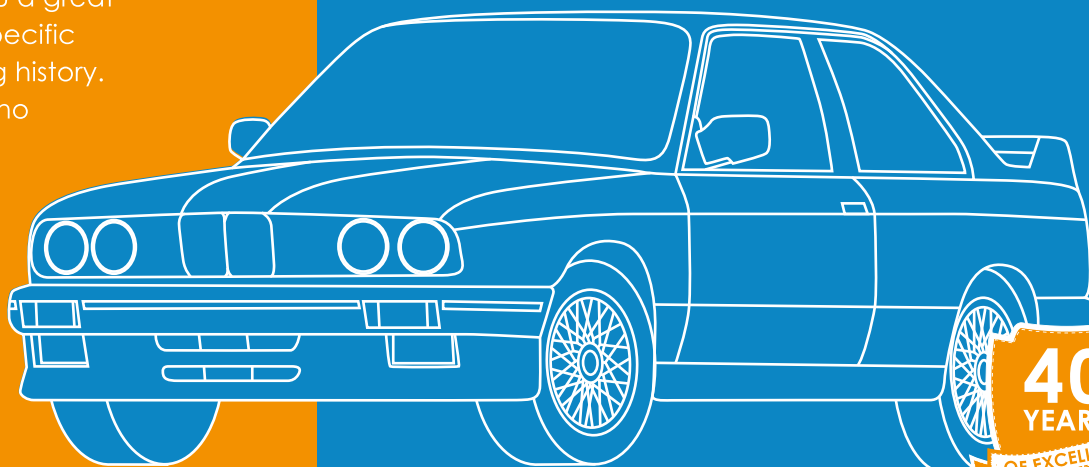
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Wings & Wheels

The annual charity fundraising event in Holland
featured a stunning array of BMW classics

Words: Jeroen de Laat Photography: De Laat Foto





We've been to the Dutch Gilze-Rijen military airbase several times in the past – usually to watch stunning arial demos with F16s and Apaches wowing the crowds – but our focus this time was more towards the ground level when we visited the seventh running of the Classic Wings and Wheels fundraising event, even though we got to see some classic wings, like a Spitfire and a B25 bomber, while were there, too.

With every edition of the event the organisers manage to gather some special cars, planes and people. This time the event also wanted to celebrate the 50th anniversary of Matra cars and this, combined with the fact that funds were raised for the Dutch fire burns foundation Brandwondenstichting, caught the attention of the 73-year-old race legend Henri Pescarolo. This Frenchman is a former F1 driver, among others for Matra, and a Le Mans record holder who competed in an unbelievable 33 runnings of the 24-hour event. Having suffered severe burns in a F1 crash back in 1969 only added to his interest for this good cause. On the day itself he behaved like a kid in a candy store. After driving his old Matra MS11 V12 F1 car he was eager to test-drive some of the other classics as well, from Bentley to Matra!

The action was what drew us there, of course, and the organisers invited a few known Dutchmen: Gijs van Lennep and Jan Lammers – both being former Le Mans winners – and Giedo van der Garde. All of them have been F1 drivers at some point, and they were eager to show off their driving skills around the runway. A link to BMW can be found with Jan Lammers as he drove a Formula 2 March-BMW in his early years (1980) and as a F1 driver he 'had' to compete in the M1 ProCar competition.

The BMW action we witnessed included demo laps with recent models like the recent M and i-ranges and we also saw local BMW dealership Renova show off its own M1. Even though we are spoilt with seeing the M1's track versions in action on a pretty regular basis, it was nice to hear a more civilised sounding road-going M88 being put to work for a change as well. After an intermezzo with a F1 demo including Michael Schumacher's B192 in legendary Benetton and Camel livery driven hard by Lorina McLaughlin it was time for the vintage stuff.

The majority of BMWs in action were from the 1930s. Just like with the German Oldtimer Grand Prix we saw some of the 328-based silver Veritas models in action, and the original BMW models we saw in use were the 327 Coupé, a 328 Roadster and a rare 328 Touring built by Superleggera from Milano. Wonderful to see a rare Touring Superleggera with its lightweight aluminium body supported by a ladder-type steel frame in action for once, and this finished our day in style! ●

BE PREPARED

Winter is here and while you might not want to be outside cleaning your car in the freezing cold we caught up with Dodo Juice to get the lowdown on winter detailing

Words and photography: Midge Burr

There's all sorts of myths surrounding winter detailing, all the usual rubbish like having to apply 16-coats of hard wax, pre-heating your water to exactly 36-degrees celsius and washing your car every three hours, but what's the whole truth? To get the answers we had to draft in a pro, and it just so happens that pro is Dom Colbeck, the main man at Dodo Juice.

If you're looking to get your car ready for the big freeze, and you should be right about now, here's how it's done by the experts...



Pre-wash

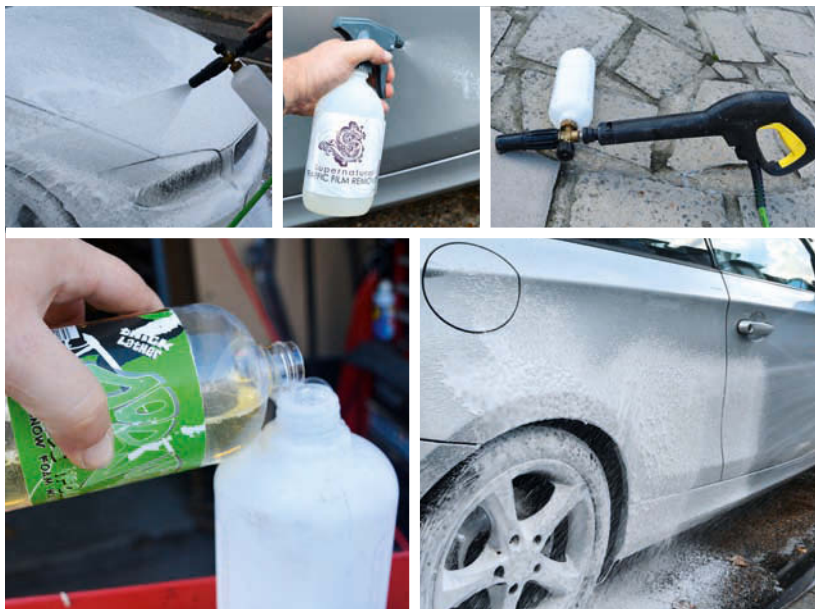


We all know winter is a right devil for dirt, grit and salt on your paintwork, but before you go hitting it with the bucket and wash mitt it's vitally important to, at the very least, get the car wet first. Most scratches and swirls are inflicted by contact washing and that's because you're essentially pushing all the heavy grime around with your wash mitt. A decent pre-wash procedure should vastly reduce the risk of scratching the surface. You're actually better off leaving your car dirty over the winter than not pre-washing, it's that simple.

In practice

If you're in a fix a bucket of clean water, or even a watering can, is better than nothing. That said, investing in a pressure washer will always be your best bet because the water pressure alone will help remove the dirt. It's also a good idea to utilise a TFR (Traffic Film Remover) to chemically dissolve the grime, especially on the lower areas of the car which attract the most heavy soiling.

Using a snow foam in conjunction with your pressure washer and a foam lance is also a great way of lifting and removing the muck without actually touching the surface. Work from the bottom of the car upwards so, as the foam runs off, it's always replenished by the product above it. Maximum dwell time means more dissolving of dirt so the thicker the foam you get on there the better.



Wash and dry

Now you've done a pre-wash for the heavy stuff it's time for a contact wash to get rid of the remaining grime. The most important thing here is to use a good quality mitt and two buckets – one for clean water and one to squeeze out your dirty water. Some of the flashier 'professional' buckets out there come with integrated grit guards, which are good, but by far the best solution is to use two separate buckets, even if they're cheap Poundland jobs. When it comes to drying, the humble microfibre cloth is your friend. Use these instead of a traditional chamois leather because they have pile for any errant particles of dirt to escape into – a chamois could trap it and drag it across your paint.

In practice

Make sure you're using a decent quality car shampoo, preferably one that doesn't contain silicone or loads of shining agents, you'll only end up removing these later. Don't be tempted to bung in a load of washing up liquid either, unlike proper shampoo it often contains salt and can do more damage to your paint than you think, especially around stone chips and the like.

Use warm water in your 'clean' bucket because cold water is far less effective at dissolving dirt on contact... plus no one likes freezing their hands off while they work. Start at the top of the car and work your way down using plenty of your soapy water. If you need to change the water half way through then do it – it only takes a minute and can make all the difference.

When you're wiping down the car with your microfibre the use of a drying aid or even a quick detailer on each panel is always a good call, these will help lubricate any leftover dirt.



Polish and wipe



The next stage is simply surface preparation. This process is important to make sure the paint is ready to accept those protective layers and consists of further decontamination, a polish and solvent wipe down. Some say an in-depth machine polish is the way to go but in reality that's completely optional. In all honesty you might as well save all that effort for the spring time – your car is going to get dirty over winter whether you like it or not. Save the effort, along with a micron or two of clearcoat and move on to a minor clay session and a quick hand polish.

Next, and perhaps the most important part, is the wipe down phase. As I said many shampoos contain silicone and oils that level the optical finish (or, to us mere mortals, give a nice glossy appearance). These may be great for maintenance washes, but they're not so clever when you'll be trying to get a sealant to stick to the paint later. Wiping down the whole car with a solvent quickly dissolves these oils in preparation for the protection stage.

In practice

The polishing bit is simple enough but what sort of solvent should you use? Well, although you can technically slap on some white spirit, panel wipe or even vodka, the best option is a dedicated tar remover or alcohol-based glass cleaner. What you're looking for is an IPA (Isopropyl Alcohol) concentration of 20-50 per cent, no more. Using a clean microfibre and your solvent give the surface a good going over, by now it should be cleaner than a brain surgeon's whistle.



Protect and paint



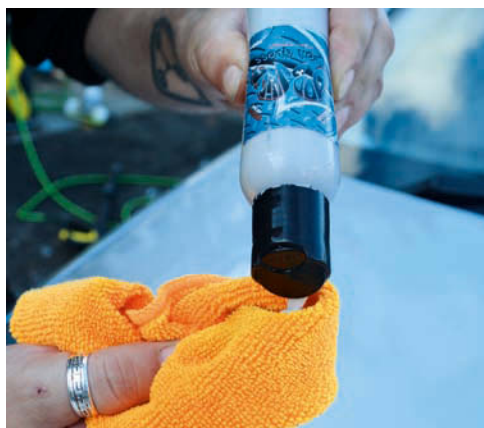
Now you have a paint surface free from dirt and oil it should offer perfect adhesion for LSPs (Last Stage Products) so now can you apply the layers that are going to keep it nicely shielded over winter. A quality wax is, of course, better than no protection at all but Dom suggests opting for a man-made paint-sealant or semi-synthetic 'hybrid wax' if you can. There's various reasons for this but basically sealants tend to be harder wearing – after all you'll be wanting it to last until winter's over. Natural waxes are a type of sacrificial layer meaning that they degrade more quickly over time and also tend to pick up dirt along the way.

Sealants on the other hand are engineered at a molecular level to repel dirt. The chemically-gifted guys in white coats will tell you that their molecules are arranged in a more regular, orderly fashion and this stops the dirt sticking. The molecules in natural waxes on the other hand are much more randomly structured enabling the

muck to penetrate and cling. The structural differences are similar to the ones between plywood and chipboard, only a lot smaller.

In practice

Apply your sealant panel by panel, observing the instructions on the bottle. Buff off any residue on each panel with a clean microfibre before moving on to the next one. Make sure you don't miss any parts out, and then do the whole lot again when it is dry to build up another layer. Unlike waxes many sealants are safe for use on side glass and trim too... oh and don't forget your wheels while you're at it.



Maintain



Believe it or not, the secret for perfect winter maintenance is not to clean your car too much. Now I realise that's a strange thing for a firm that sells detailing products to say but, unless you have any exposed metal or an older car which presents a rust risk, that really is the truth. Dom says: "If in doubt, leave it dirty or you'll do more harm than good." At most you should halve the frequency of normal washing, once a month is more than sufficient.

In practice

Pre-washing is essential and so is using a snow foam and shampoo that won't strip your sealant. Don't forget your paint is thoroughly protected and any dirt is now sitting on top of that layer protecting it even more, chances are it'll slide right off with a quick once over too so there's no need to get obsessive with the regime. Besides that's why you did all that preparation in the first place!

Pre-wash, wash and dry your car as normal but don't bother with any polishing or solvent wiping, if you're feeling flash you can top up the sealant with another layer but that's it. Just enjoy the low maintenance motoring until spring.



Top finishing tip

If it's likely to drop below freezing get yourself a big bag of salt and use it on your drive, path or the road when you've finished your washing. All that clean rinse water coming off your car will freeze overnight causing a slippery sheet of ice come morning. Safety first and all that.

Top gear

While we were down at Dodo Juice we thought we'd get Dom's top five product recommendations for winter prep...



Supernatural Traffic Film Remover: £9.95 (500ml)

Perfect for the pre-wash stage this TFR is perfect for heavily soiled paint, especially around the bottom of the car. It can also be diluted 1:5 for lighter cleaning jobs. Simply spray on, leave to dwell for five minutes and rinse off. The citrus solvents will do the business.



Apple iFoam: £12.95 (500ml)

Quite possibly the best name for a detailing product ever – it smells of apples, creates a thick luxurious snow foam not unlike shaving cream, and I love it. This little bottle can make up to 10-litres of foam with an ultra long dwell time so it should easily last you the entire winter. If the weather is freezing you can even make fake snow with this stuff – that's always a good trick.



Clearly Menthol Glass Cleaner: £7.95 (500ml)

It's an alcohol-based glass cleaner with a 20 per cent IPA content making it perfect for a solvent wipe down on paint, it also happens to be pretty amazing on vinyl wraps. This one evaporates off quickly for a clean, residue-free finish removing any oil and silicone... oh and it smells like minty mouthwash. Weird.



Iron Gloss: £19.95 (100ml)

If you're meticulous about your sealants and want to put the effort in before winter, this is the one for you. It's a little bottle but you don't need much to treat your whole car and it's so tough – it'll protect the paint for between six months and a whole year! It can also be layered and used in conjunction with other spray sealants.



Future Armour Nano Sealant: £3.95 (100ml)

One of the most user-friendly sealants ever made, this brand-new product proves that a little can go a long way – with this you can quickly protect your whole car in minutes for under five quid. Use just a little on either wet or dry panels and it'll offer protection for two-four months. It also makes a great 'top up' product for your maintenance washes. Awesome.

LONGTERMERS

Another roundup of life with the *BMW Car* fleet...



F30 320d Sport

Lots to get through this month, so let's crack on. First up was a return visit to PhilServe in Carterton (www.cartertonautorepair.co.uk) as I'd noticed a rust line around the inner circumference of the outside of the rear discs, if that makes sense (see the picture above to see what I'm talking about). Essentially it looks like the new pads are not in contact with the inner portion of the disc, which I thought would be an issue from a braking performance perspective (and hence a Very Bad Thing given the recent weather) and it looks plug ugly, too. However Ollie from PhilServe had a look and declared it normal.

The theory goes that the discs are worn, hence the new pads will take time to adhere to the discs in terms of the wear pattern being reflected in the pads. To be fair this does sound reasonable, even if at the time of writing I've covered 1500 miles since the pads were swapped and there's no sign as yet of the rust clearing (well, maybe a little very recently). It's only surface rust, easily removed with some light rubbing and hence the disc isn't being damaged, but nevertheless it will require careful monitoring to ensure it doesn't worsen. And if it doesn't clear at all by March I'll need to pay for new discs (and new pads again too, I

suppose) as otherwise I daresay BMW will send an invoice for replacements when the car goes back, but we'll get to that later...

Interesting fact learned here though. When discussing with Ollie on how to accelerate the 'healing' process, we both basically agreed that more enthusiastic driving leading to increased application of the traction control (which operates on the rear wheels of course) was needed. Sounded logical. Cue a colleague in the office at this point, something of a BMW geek, who helpfully piped up that swiftly reducing the cruise control from a high-ish cruise (providing

nobody is behind you of course) has the effect of applying only the rear brakes, as the cruise doesn't use the fronts to nip away at the speed.

So we tried it; accelerate to 70mph then quickly flick the cruise down to 20mph. It feels as if the car has whipped past an angler, his line has then attached itself to the rear bumper and the largest fishing rod you can imagine is reducing our gait to such an extent that you're both flung forward and sucked back into your seat at the same time, the car essentially getting dragged back to a slower velocity. It's an odd feeling, and I can't imagine it does much for the suspension wear,



but as it clearly only operates the rear brakes and those are the ones which we need to bed-in quickly, it was worth a go.

No, it hasn't completely fixed it at the time of writing, but hey ho we will keep doing this and hopefully within a week or so the pads would have worn down enough at the leading edge (i.e. the outer edge of the disc) for the whole thing to then be in contact with the metal surface. So more on that in due course, along with news of replacement front pads which will soon be needed, plus an oil change service. I'm hoping the sheer amount of work the front brakes have to do will ensure they sort themselves out in short order.

I mentioned a North Wales trip last month in a demo 520d Luxury, and other than the weather, which was truly biblical (thankfully clearing just enough on the Sunday morning to allow me to get the Phantom 3 up in the skies above Betws-y-Coed), the other highlight of the weekend was in cementing my admiration of the F10 5 Series. It just does so much, so well. It has a snug interior and the eight-speed auto provides seamless acceleration

resulting in the placebo effect of it feeling faster than the 320d manual. Let's just overlook the fact that the two-litre motor looks almost apologetic in that vast engine bay. It is a handsome beast to look at and was truly comfortable over the course of several hundred long miles through the pouring rain. I just had to have one.

So that's the decision made. An order has already been placed for a Mediterranean blue 520d auto, with Venetian beige interior and black carpets and, all being well, come late March 2016 I'll be swapping out of KP12 and into the F10. Truth be told, as I think I've said before, I should have bought one back in 2013. All good things etc.

Why not the Jaguar XE I mentioned last month? Two key reasons. First off, pedantry alert – the cup-holder smacks of penny pinching and for whatever reason I really took exception to this. Plus the absence of a cover means that all manner of detritus will gradually accumulate within the recesses and that idea didn't appeal at all. And second, considering the BMW and the Jaguar share the same ZF eight-speed

auto, I was surprised at their different manners. The BMW calibration resulted in smooth and seamless upshifts but I groaned a little at the Jag's which would mark each change with a distinct 'step' in the power delivery. It gives a car character on a test-drive, but over the course of a couple of years' worth of ownership I suspect it would just become damn annoying. Hence, ultimately, the Jag was ruled out. Although it was a tough decision. And a quick thanks here to the guys at Ridgeway Jaguar in Oxford (01865 565411) who were never anything less than friendly and approachable. Mercedes-Benz dealers, take note.

So, what have we bought then? Well, there's no easy way to say this – it's a £43k 520d, and that price set against that engine choice has caused some mirth amongst friends and family. I could have bought a used Gran Coupé, or an F10 M5. Or a yacht etc. And they're right, too. And in the case of the M5 I did briefly consider it. Then I looked at David's monthly reports, reminded myself that petrol is not that much cheaper than diesel, and thought again. On a PCP deal, and

with a good deposit contribution from BMW (to the tune of £4k) plus a little from ourselves, and a further reduction in order to try and sell more units before the end of the year, the monthly cash flow situation wasn't impacted too much from having the new car, even at £43k. Introduce an M5 into the equation, though, and the cash flow forecasts take a hammering, and never mind RFL and insurance costs. Plus there's an indeterminable something about specifying your own car. Hence the decision was made to stay derv.

£43,000 is a lot of money for a two-litre diesel. It does include over £8.5k of options by way of compensation though (and in lieu of a larger engine option), as I wanted a nice spec this time around. So, here we go. First option box ticked: the Pro nav pack for £1290. This I've always admired in modern BMWs and the bigger screen, new-style larger controller and speedy response of the current version is deeply impressive.

Next up, adaptive lights. The demo car didn't have these, and I suspect those who haven't driven a car with



them fitted would respond to a night-time drive of the demo car with a 'yep, those lights are fine I don't need to spend £540 on fancy ones'. Whereas those who have (i.e me) would respond with 'crikey, these lights are awful. Why are they not dancing along the road surface like somebody off *Strictly*?'. Ergo, adaptive lights with headlight assist has also been selected.

Sports seats were next, as whilst the standard pews are comfortable enough, the sports items locate you just that little bit lower. Plus the extra thigh support is welcome, and they look good. As indeed they should for £475. Ambient lighting is absent on the SE so that was ticked for £220, plus initially the sports steering wheel at £110. This was later dropped, however, when it became clear that said wheel had just become the standard fitting (and on mine it will include paddle shifters as part of the upgraded £1685 sports auto option however incongruous paddles will look on a 20d). Electric rear and manual side blinds were also selected at £410 (to stop the hoi polloi from prying, but also in preference to privacy glass, which our daughter complains makes the rear of KP12 too dark, and she's old enough now to lower the blinds on her own), as was Anthracite Wood at £355. An upgraded BMW-branded hi-fi at around £445 is substituted for the more expensive Harman Kardon option, which I couldn't quite countenance having sampled the standard system. A little more power is always welcome, though, hence the upgraded system. Oh and we've also

gone for LED foglights at £175 plus the upgraded air-con with extended features, if for no other reason that it results in several more buttons on the dashboard (and I really like my buttons). I know, I know, a frippery at £305 but there it is. Another frippery is the heated steering wheel, which is good value I thought at £185, especially this time of year. We've also specified the Speed limit display function at £250, as the demo car had it (a cunning ploy) and during the North Wales trip I found myself using it fairly often.

As for the other options, but specifically regarding the technology, we've got the reverse camera at £375, surround view at £530 and the Active Security Package for a swallow-hard-and-pay-up £1340. This offers up the 'Driving Assistant', consisting of collision mitigation, which is essentially front-pointing cameras which activate the brakes if they deem you're about to collect the car in front or mow down a pedestrian, plus lane guidance lines, which used to be standard on higher-spec E60s back in the day (my 535d had it as standard back in 2007, for example. Nowadays it's optional). The package also includes Lane Change Warning, which is basically a blind spot monitor. Thus equipped, the F10 will blink at you madly from the inner door mirrors if it detects a car in the blind spot and one attempts to change lane. All very 21st century. Oh and the aforementioned Active Security Package also includes power-fold door mirrors; a nice touch. We'd actually initiated optioned the Advanced Parking Package, which

includes the cameras plus Park Assist. But the latter only works when you parallel park, and I cannot remember the last time I had to do that. So a package switch was effected.

And that was going to be it. The sales contract was signed and the deposit paid. And then I thought, as bizarre as it sounds, there's something missing from the spec. BMW's Head Up Display is a fascinating piece of technology and really adds to the driving experience.

It was specified on the E60 535d we had in 2007 (OY57VUN in case the owner is out there) and I was aware of the fact that when I sold that car in late 2009, I subsequently didn't really miss the HUD. That said, I've constantly used the HUD on all BMWs thus equipped which I've driven since, and it dawned on me that HUD plus the already specified tech would be a nice combination. Plus it would mean three extra buttons in total to the right of the steering column, which the child in me found immensely appealing. The fourth and fifth buttons of course would be Night Vision (which I would never have, as I fail to see the point) and radar-guided cruise, which I find to be pessimistic in the extreme and hence capable of winding me up in very short order. No, the only other option I wanted was the HUD.

But at £995 it would really take the budget, such as it was by this point, and tear it up. Plus I was aware that BMW had signed and sealed the deal quickly, confirming a build date of early January and hence the time available to make changes was short.

In 2007 we procrastinated for too long before deciding that we actually did want to have a sunroof only to be told it was too late and the spec was now final.

So for once, indecision didn't reign. The call was made and HUD was added, and the instant I said include it, I knew it was the right thing to do. It adds not only to the driving experience but also the resale value, and really completes the 'new age' tech that the car will have. So, there you go. I now have a long-ish wait until March when we will take delivery. And to say I'm a tad excited is a massive understatement.

All this means, of course, that KP12 has to be prepared for its return to BMW. Which means the roof now has to be repaired plus the wheel needs to be refurbished. I've also noticed this month that something has taken a chunk out of a piece of trim on the lower offside front edge down by the foglight housing. I doubt this is classed as 'wear and tear' so I will get it replaced. More on that and a final write-up in the coming months.

Mark Williams (@QuentlyBentin)



F30 320d Sport

YEAR: 2012

MILEAGE THIS MONTH: 415

TOTAL MILEAGE: 51420

MPG THIS MONTH: 46.6

COST THIS MONTH: Nil

Alpina E28 B9

It's been a constructive month on the Alpina front. As I write this from my hotel room in Edinburgh, having driven the four hours to get here in the B9, I don't have any sign of tinnitus. Clearly my door seal fitting skills from last month aren't too shabby after all. The doorcard is also completely rattle-free which is a definite bonus.

I finished last month's report with two tasks to complete and am pleased to report positive progress on the glovebox wiring. Sadly the mobile welder seems to have gone underground but I have had another contact suggested to me so I will send him pictures over the next few days and hope he doesn't get scared when he sees them!

To be honest I'm glad I got the glovebox wiring sorted out as every time I opened the lid my heart sank when I saw the mess behind. It wasn't a difficult job by any means although trying to follow all the various wires and work out where they went took a

little time. Given I will never use the stereo in the B9 (it's not that sort of car) I've cleared out all the feeds and cleaned up what was left. It's nice to now open the glovebox and not see the mess inside.

Another little job I got round to was tidying the front doorcards up. Anyone who has ever owned an E28 will testify to the problem whereby the cloth on the cards contracts over time and exposes the white foam used to pad the doorcards through the grommet hole used to plug where the window winders would have been on a non-SE spec car. The cloth is high on impossible to source so I've done a temporary repair in spraying the foam with black paint. Whilst it's not a permanent fix it looks great and only took minutes, which is a bonus.

The drive to Edinburgh has highlighted another small job (hopefully anyway) to tackle, as the windscreen washer jets now aren't working properly. The jet of washer

fluid won't quite reach over the wiper blade on the passenger's side and isn't coming out of the driver's side at all so in this sort of weather it's effectively useless.

My gut feeling says it's a weak washer fluid pump rather than a blocked jet. I'll do some research and hopefully it will be a simple DIY job that I can get fixed over the Christmas period. Given it must be MoT time soon I won't hang around with it.

On other car news, I've gone and done it again. Having sold the barn find to make room in the garage it lasted all of two weeks before I couldn't resist temptation and I've added an E46 M3 SMG II to the Stiling stable. I think I need to seek medical attention for this damned affliction soon.

In my defence, though, I can see values of these fine machines only going one way over the next year or two and a very tidy 76k-mile example like this one isn't a bad place to be

investing, I would suggest. Despite being an M-car nut it's surprising I've never actually owned an E46 M3. In fact, I turned down a £5000 discount on a brand-new CSL back in 2003. In my opinion it's pretty clear that values of good non-CSL examples are now at their rock bottom.

We'll see what happens on the value front, of course, but in the meanwhile there are a few jobs to tackle. Who needs a relaxing Christmas period hey?

Elliott Stiling



E28 Alpina B9

YEAR: 1983

MILEAGE THIS MONTH: 328

TOTAL MILEAGE: 138,212

MPG THIS MONTH: 28.3mpg

COST THIS MONTH: An M3!



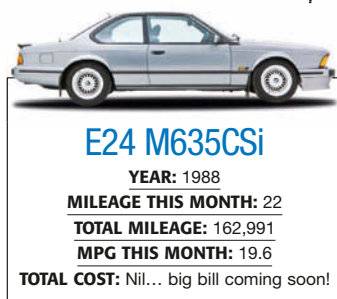
E24 M635CSi

I was hoping to be able to give you a full write up this month of how gloriously the M6 drives with its new Eibach springs and Bilstein shock absorbers in place... but as you can see that's not happened.

Foolishly it appears I had procured a set of springs for a 635CSi and these do not fit an M635CSi. Thus I decided to bite the bullet and invest in a set of OE springs from Germany... if the ones on the car are original they must be well past their sell by date after 162k miles. Sadly the springs had to come from Germany which meant the

job has yet to be completed as I type. Next month, I promise...

Bob Harper



F10 M5

Nothing to much to report on the M5 this month. It is inching ever closer to the end of its Service Inclusive pack at 60,000 miles and is performing beautifully. As winter weather sets in a bit more, I am as always grateful for the fantastic heated seats and sure-footed winter tyres. On dark wet mornings the amazingly bright adaptive headlights are a real boon, allowing me to see further ahead than the lights on any car I have ever driven. The wipers are excellent, too. Very rarely do they ever smear or fail to provide excellent vision. Despite all of this

excellence, I find myself ready for a change and I'm increasingly looking at alternatives to the M5.

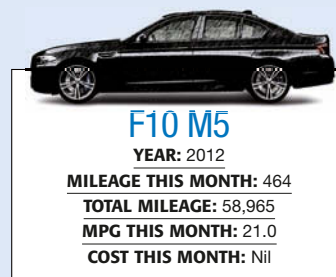
As I have said previously, though, the problem is finding something that is as capable, comfortable and usable. There are numerous choices out there that are quicker but few that are anything like as comfortable or that one would be happy to leave in a car park for long periods of time. Equally, few cars have a level of tech that comes close to the M5. My wife has just taken delivery of a new MINI JCW. It has all the tech that I have on the M5, in a fantastically

small package. Trying to find a non-BMW premium product that has great dynamic navigation, Bluetooth and iPod connectivity and a DAB radio is harder than you might think.

Only the latest models on the market can offer these things and those that have the performance of the M5 are well over £100k. So I face the difficult but not unpleasant task of trying to find a replacement that can truly live up to the M5. I am left with the conclusion that there will have to be a compromise somewhere. That one has to lose some desirable facet of the M5's

make-up to replace it is a testament to the fact that it really is the ultimate all-rounder.

David-Ingram Hill



F20 118d Sport

Now seems as good a time as any to reflect on my Head-Up Screen (HUS) and dashcam as they've been in the car for a while and I use them both relatively often. The HUS gets used daily. It's always on, I never bother folding it away and, despite the fact that it's a little on the chunky side, I'm amazed at how quickly I've grown accustomed to it sitting on top of my dash. It's actually strange getting into a car without a HUS as it's so convenient and makes keeping an eye on my speed so easy. I like the fact that I can also set my speed limiter on it, though there's a delay in selecting a speed with the steering wheel controls and it appearing on the display that's a little irritating. Also irritating is the fact that, even with the brightness set to auto-adjust to ambient light levels, at night it remains rather bright and has a habit of reflecting off the windscreen slightly but aside from that I'm really happy with it.

The sat nav side of things, though, is rather less streamlined. Firstly there's the problem of having to connect the sat nav app up to the HUS at least once every 30 days, which I don't do and then forget about. Then there's the fact that connecting the nav up to the



HUS can be fiddly and temperamental – you want to keep your wi-fi on for enhanced location accuracy but that means that when getting into the car, as my phone is connected to my home wi-fi, I need to manually connect it to the car. And, even once you've done that it sometimes just refuses to work completely. It'll show up as being connected on the HUS, the nav will be working on my phone but there will be no directions appearing on the display and no audio guidance either. I've also had a couple of crashes (software, that is) leaving me mid-route and attempting to reload the software whilst driving. Also sometimes not having a map in front of you can be irritating when complicated junctions or roundabouts are concerned and things can get confusing. The concept is great and I like it when it works but unfortunately it's not faultless and can often be a frustrating experience.

The front and rear-facing cameras



have, on the whole, been excellent though they too have their failings. First, apparently the front camera is easy to remove for security but for the life of me, I can't figure out how to extract it from the car! It doesn't want to fold and it doesn't seem to want to leave so for now I've given up attempting to move it. It might be a case of Reading The Flipping Manual. That might also apply to the fact that, every so often, the strict eastern European-sounding female voice will order me to format the SD card.

Now, my other dash cam that I have in my E39 will happily keep recording over all its old footage, saving any files you've padlocked and that's it – it requires no further attention. But here it would appear that you have to wipe the card to make room for more recording, at least that's what it sounds like. While I'd like to think you can just set the camera to keep recording, or that it should be doing that by itself

anyway, BMW's attempts to make the user interface super user-friendly means that you have some big coloured on-screen buttons to press that control the most basic functions, and that's it. It's very limited and I can't see what I can do to shut her up, besides formatting the card, but that deletes everything, including any files you might have saved following an incident. If you're not paying attention, you could easily give into the demands of the voice and unwittingly delete something extremely important if you've not had a chance to download it to your computer.

Very strange and potentially a massive oversight. I will peruse the instruction manual more thoroughly and report back with my findings.

Elizabeth de Latour



The Everett Fleet

It's not often you end up buying a 'ringer', but when I bought the blue 318iS as a track car basis, that's exactly what happened.

The car was ready for an MoT before the first track day but the black alloy VIN plate on the inner wing didn't tally up with the one on the V5. Whoops. However, I wasn't that bothered as it's a track car, not a prime investment. But keen to know it's true identity, I checked the VIN number with the sticker on the bootlid behind the numberplate and removed the engine ECU again and checked the VIN label – and they all matched. They indicated that it's a 1992 J-registration 318iS with a sunroof in Mauritius blue – so that's why normally super accurate Montreal blue paint didn't quite match and I had to get paint specially mixed and tinted. Montreal and Mauritius are very similar – literally two or three shades out.



A few more things add up as well – the early type ABS block, the pre-'93 timing chain tensioner on the original engine and the lack of the EWS chipped key when the original 1995 M944UCP would have had one. The '95 type steering wheel airbag hadn't been wired up either. So, I gave the real VIN number to Sytners who came back with a registration number and far from there being any theft or insurance fraud, it would seem that someone just had two metallic blue 318iS Coupés and built one from two, swapping logbooks in the process. I applied for the correct V5, got it two weeks later and the car is now back on the correct J-plate awaiting an MoT.

Another mod is the fitment of a Convertible and Z3 type front under strut brace. These are quite hard to find and about £150 new from BMW and I wasn't paying that for one. Every Z3 or E36 Convertible I found in the



breakers had already been relieved of this sought after part but I was in the right place at the right time when a front ended 1999 Z3 1.9 was being forklifted into the yard. Like a tramp on hot chips, I was there with the tools and relieved the car of the under brace, steering rack and short-shift gear lever. Z3 racks are quite sought after but don't really warrant the high prices – they are old cars now and many of these racks are now worn and leaking. A better bet is the later purple tag E46 rack, available from most breakers for £30 or £40 and a swap for the stock E36 item. The Z3 rack sold on eBay for £100 and the short-shift gear lever is earmarked for the 318i Touring. The strut brace was cleaned and painted and once the four captive sleeve nuts were fitted into the crossmember (you need to open the holes out a touch so they can be hammered in) the X brace was bolted

in. It's an easy job but remember to tighten the four 13mm front bolts and that the captive nuts compress and lock into the crossmember fully.

In other news, the Dunlop 225/50x16 tyres have been replaced with two sets of parts worms – two Continentals with 6mm for wet stuff and two almost unused Kumho Ecstas with another set of Toyos with around 3mm. These three sets are all 225/45 in order to get the profile down to lower the car, lower the gearing slightly and improve the handling and I will be borrowing an arch roller in order to flare the rear arches a few millimetres. Finally, a pair of Eibach's lovely alloy adjustable rear control arms have been fitted – more on that over the page, but the end result of all this should be a 318iS that handles even better than last year. Roll on its first track day of the year at Cadwell Park!

Andy Everett



Fitting E36/E46 Eibach adjustable rear control arms

Andy Everett takes the plunge and installs a set of Eibach's adjustable rear arms to his E36 track car

BMW's Z axle – first seen on the late 1980s Z1 – is undoubtedly a better setup than the old semi-trailing arms. With far better camber and castor control it was a step in the right direction. However, the weak link for track cars (as the racers found on the E36) is the pressed steel, hollow track control arms. These link the bottom of the rear hub to the diff carrier and, whilst they are absolutely fine for road use, they can flex under track conditions. The standard arms do have some camber correction adjustment on the outer pivot via an eccentric bolt and washer, but it's not enough for correcting the rear

camber after the car has been professionally lowered. So to put it simply – adjustable rear control arms are there to provide proper adjustment of the rear suspension geometry and also to cure the effect of bendy standard arms.

I fitted a pair of Eibach arms on my 1992 318iS track car to sort this out. I wanted a bit more negative camber than the factory adjustment allow and adjustable arms will enable this. These are expensive at £259 plus VAT (RRP) but they're a long way from the £50 eBay specials. The eBay ones are made from steel and whilst they look okay and will

undoubtedly do the job, you have to ask yourself just how good the quality is. For example, on the outer end the formed steel bracket that fits onto the rear hub is welded to the steel rod. Just how well was that welded on? Because it's like the old 'how deep will this submarine go before it starts to leak' quandary, you don't want to find out that the welding and subsequent heat treatment wasn't good enough when the rear wheel makes a bid for freedom on a track day. If that control arm breaks, the rear wheel comes out, the driveshaft will pull out of the diff and you will have an accident. Still want cheap

control arms? I would rather have standard BMW arms and live with less than ideal geometry!

The Eibach arms get around this problem by having double threaded control arms that screw into forged alloy end pieces. As with everything Eibach sells, the quality is superb and to be honest these arms are good enough just to have in your front room to play with – they're that good. For those on a tighter budget, Eibach also sells steel arms that retail at £132.47 plus VAT, but Eibach UK reports that the alloy arms outsell these by some margin. But tech talk over – here's how to fit a pair.

Here are the Eibach arms fresh out-of-the-box. They are actually made for Eibach by US firm SPC Performance and, as stated earlier, they are a work of art. The workmanship on these is just second to none – I felt almost guilty fitting these to my old E36!



Smooth to the touch, the ends are perfectly made and come with new uprated rubber bushes. There is just no need for anything polyurethane here. Adjustment is with a 20mm spanner on the centre bar with 32mm anodised locknuts.



The first job after you've raised the rear of the car, supported it on stands and removed the rear wheels, is to make sure the bolts will come out. These inner ones are often very rusty and 18mm can rust away to 17mm. Order new ones, part number 33 32 1 090 693 for 88mm long bolts or 33 17 1 090 824 for 80mm long bolts. If unsure, just order two of each.



The inner bolts will not come out with the diff bolted into place but you don't need to remove the diff itself. With a jack and a block of wood as shown, bend the centre of the rear anti-roll bar upwards until you can remove the two 18mm rear diff mounting bolts. With that done, you can jack the diff upwards enough to provide clearance for the bolts to be withdrawn.



This photo shows the standard setup with the pressed steel factory arms. These are actually two pressings held together by the bush at the inner end and the through bolt at the outer end. The result is light, fine for a road car and they never rust out.



The rear damper lower 18mm bolts need to be removed next, and you may as well remove the rear springs to take any tension off the hubs. When refitting these bolts screw them in finger tight and torque them properly with the car sat on its wheels and settled. The torque figure is 100Nm.

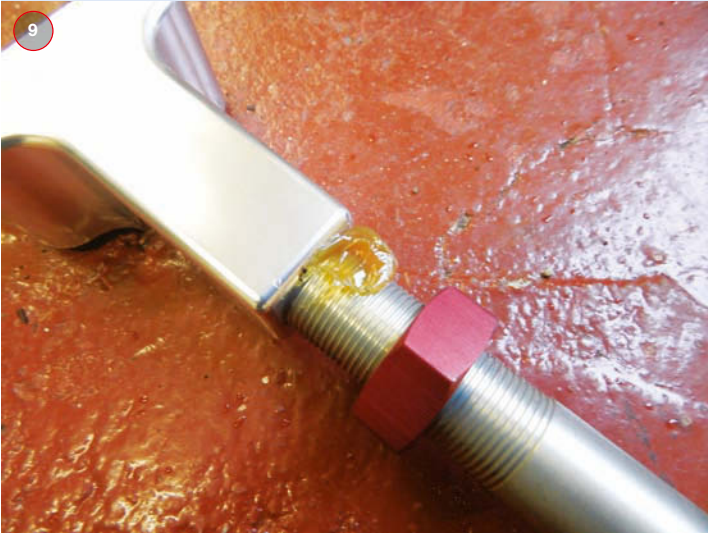


The outer bolts are tight and may snap off, as one of mine did. In this case, have a new hub bush ready to fit just in case - part number 33 32 6 771 828. It's not a bad plan to fit new ones anyway if you have the time as they often look a bit rosey. The Eibach arms come with new outer bolts so make sure you grease these up before you fit the new arms.

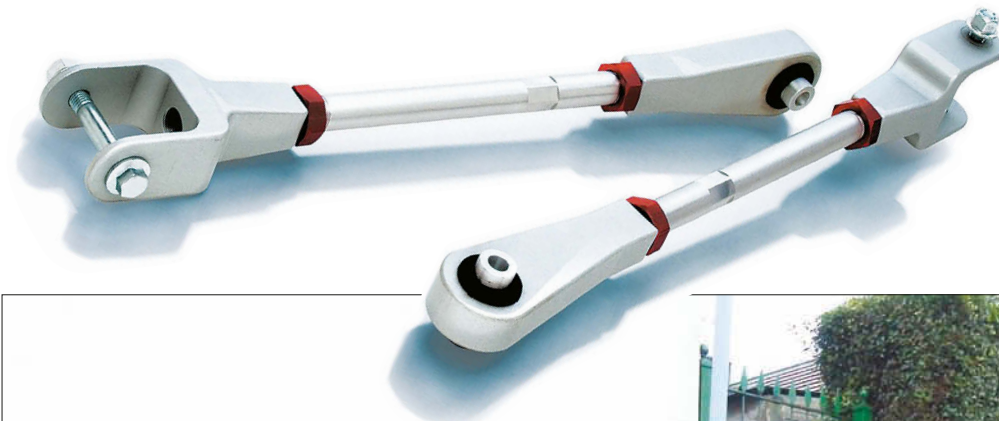


This photo shows a comparison between the standard BMW arms and the Eibach items. The weight is about the same but the quality of construction and adjustability is in another league. You can see here that the factory arm is two separate pressings and not one piece. It means they'll never rust out but on hard cornering with sticky tyres they can bend and flex.

This photo shows the threads on the Eibach arms being greased. This is important if the car is to be used in wet weather as steel and alloy will eventually corrode no matter how high quality the metals. With care these arms will just last forever. Before fitting, adjust the length of the Eibach bars to the exact same length as the originals to provide a starting point for adjustment.



Here is the Eibach arm fitted. Before the springs and dampers are refitted jack the rear suspension up to approximately the running ride height and torque the inner bolt to 77Nm and the outer nut (NOT the bolt!) to 110Nm with thread lock in both cases. It's important that you do this – tighten them with the suspension on full drop, and the bushes will be ruined quickly.



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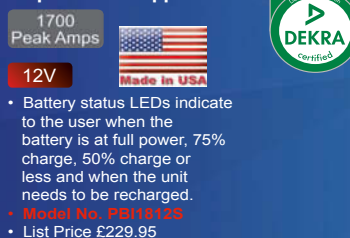
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E89 Z4 sDrive30i

The quickest (and the last) of the naturally aspirated Z4s was a short-lived model, but it can provide plenty of thrills without breaking the bank

Words: Bob Harper Photography: Max Earey



History

The E89 generation of Z4 hit the UK in May 2009 and featured the 23i, 30i and 35i, with the latter machine being turbocharged. The 23i was by no means a bad car, it's simply a case that the 30i was better thanks to having an additional 54hp and 44lb ft of torque. Interestingly, both the 23i and 30i were quoted as having identical economy and emissions figures at 33.2mpg and 199g/km.

With the first gen Z4 BMW had made what it thought was an out-and-out sports car but due to feedback from its customers it made the decision to create a less-sporting machine with the second gen, seeing the Audi TT and the Mercedes SLK as its natural rivals rather than attempting to gun for the Boxster's crown a second time. If anything demonstrated this approach it was the adoption of a folding metal hard-top which added weight and complexity as well as making the car considerably

more refined and a better prospect over the cold winter months. Its party piece was that the roof could be raised or lowered in a scant 20 seconds.

The 30i was well equipped, too, with two-zone auto air-con, xenon headlights and leather upholstery although as heated seats weren't standard we'd recommend finding one with this option – it makes all the difference during top-down motoring on colder days. Very little changed during the 30i's lifespan – an M Sport was available with more aggressive styling (and a £3100 price premium) – and there was a Highline Edition of the M Sport available in 2011 which included 19-inch wheels, Bluetooth, Professional Nav and a USB interface. The arrival of BMW's four-cylinder turbocharged engines saw the model's demise when it was replaced with the sDrive28i in the latter part of 2011.





E89 Z4 sDrive30i

ENGINE: Straight-six, 24-valve, petrol
CAPACITY: 2996cc
MAX POWER: 258hp @ 6600rpm
MAX TORQUE: 229lb ft @ 2600rpm
TOP SPEED: 155mph (155)
0-62MPH: 5.8 seconds (6.1)
ECONOMY: 33.2mpg (34.0)
EMISSIONS: 199g/km (195)
PRICE (OTR): £33,620 (£35,425)

Figures in brackets for automatic version

Why should you buy one?

Quite simply because it's a great car! No, it doesn't offer Porsche Boxster levels of driver involvement but that doesn't mean it drives like a soggy blancmange either – it's a fine Roadster that will provide plenty of thrills yet with its folding hard-top is also a very refined coupé when the weather's inclement.

We've flagged up the 30i here as being one to look out for as this was the very last naturally aspirated Roadster that the company produced and as well as offering plenty of thrills it's now a relatively affordable machine. With the silky 258hp N52 'six under the bonnet it provides vivid acceleration yet doesn't have so much power that it overwhelms the chassis.



What goes wrong?

The Z4 is proving to be pretty reliable, especially in 30i guise. One of the biggest bug bears seems to be rattles from the roof when in the raised position but often this can be sorted with lots of lubricant, pieces of felt and some patience. Go for a road-test in any potential purchase and keep your ears open.

The engine is generally good although there have been some cases of wear within the camshaft housings on higher mileage versions. The hydraulic valve adjuster problem that affected earlier versions of the N52 don't affect the Z4. However, as the N52 in the 30i is a direct injection unit any repairs needed here could be expensive – injectors, NOx sensors and fuel pressure sensors have been known to fail, although it's not a very common problem.

The body should be in perfect condition – any dodgy panel gaps and mismatched paint will be tell-tale signs of one that's been in an accident – walk away as there are plenty more to choose from. Rear light clusters are known to let in water and 19-inch rims can be susceptible to cracking.

Running costs

The good news here is that the Z4 30i really shouldn't break the bank to run. Road tax isn't the cheapest at £265 a year (both manual and automatic) but this shouldn't really be a deal breaker. Servicing can be done via BMW's menu pricing system and typical costs should be around £136 for an oil service, £190 for an oil service with microfilter and £332 should the plugs need doing at the same time. A Vehicle Check is £59 and front or rear pads will set you back around £200 each end.

Your other major expense will be tyres – many owners will have ditched the run-flats – and how much they cost will depend on whether you have the 17-, 18- or 19-inch rims fitted. Typical run-flat costs would be around £360 for a set of 17s, £440 for a set of 18s and a slightly heavier £800 for a set of 19s.



How much to pay?

Prices for the 30i start at about £13k and rise to just over the £20k mark. The highest priced machines are The Highline editions, some of which evidently hung around at dealerships when they were new, as they weren't registered until the second part of 2012! Standard-spec 30is start at around £15k from BMW main dealers and you'll need the best part of £17k for an M Sport. While machinery is available slightly cheaper out of the dealer network we'd reckon on spending just a little more and getting the peace of mind that comes with a car with an Approved Used Warranty. Also, the market for Roadsters drops off significantly in the winter so drive a hard bargain – get some money off the sticker price or aim to get a second year's warranty thrown in for free.



Verdict

Overall the 30i is a very pleasing prospect, and if you're a fan of normally aspirated Roadsters this is the last of the breed! It has plenty of performance – 0-62mph in less than six seconds is plenty fast enough – and while it might not be desperately tack-sharp in the handling department it's still a tidy machine to drive rapidly across country, especially with that sonorous straight-six singing in your ears.



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We've teamed up with those car cleaning wizards at Meguiar's to provide the winner of the best letter each month with a fabulous Meguiar's New Car Kit. This superb kit includes Ultimate Wash & Wax, Ultimate Wax, Endurance Tire gel, a Microfibre Wash Mitt, a Water Magnet and a Soft Foam Applicator pad worth £34.99!



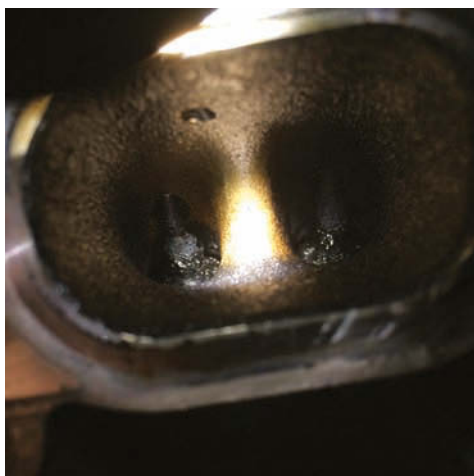
Nut allergy?

I am an avid reader of *BMW Car* and would like to ask your advice on walnut blasting. I read an article in the September 2015 issue regarding your 135i longterm where walnut blasting was carried out by TWG Automotive with good results. Have you had any feedback from BM Sport who I saw advertising

walnut blasting in its advert in the January 2016 issue. Basically would you recommend TWG for having this carried out? It is not local to me but I am prepared to travel on recommendation.

Les Staines, via email

You don't actually say what the problem with your car is Les, but if your car is equipped with direct injection – either turbocharged or naturally aspirated – then walnut blasting can really make a difference to the way the car drives. In direct injection engines as there's no longer any fuel cleaning the back of the valves you end up with a gradual build up of carbon deposits on the back of them. As this takes place slowly over time it's not the sort of thing you're likely to notice from one day to the next but you will gradually experience a drop off in performance and economy. When we spoke to BM Sport (020 8304 9797) it told us that the difference before and after on a badly affected car is like 'night and day' and that it's a very effective process that helps to bring back the performance to your engine. We were impressed with the work carried out at TWG but if you have a more local specialist who has the necessary equipment then there's no reason why they can't carry out the work.



Rust in time

I thought I would just put finger to keyboard and drop you a line to say thank you so much for one of your items in the January issue's *Technical Tips* section and, more specifically, the article on E39 rust. I'm lucky enough to have a 530i Sport, one of the first ones that replaced the 528i, and I've always looked after it well, both mechanically and cosmetically, giving it regular washes with plenty of waxing and polishing when required. I still can't find anything that comes close to the feel of this car, hence why I'm still driving what many people now think is an old car!

Having seen the gaping hole in the picture that accompanied your article it really gave me the shivers and made me take a closer look at mine. Sure enough at the back of the sills under the plastic trims I found a fair amount of surface rust, not terrible, and nowhere near a hole, but left untreated I've no doubt that in a year or so it would have got much worse. So I just wanted to say thank you for alerting me to this – I think it's fair to say you've saved my E39's life. Well, perhaps prevented a trip to A&E at least.

Simon Hofner, via email

We're glad we managed to help save your E39 Simon, they're great cars and should be preserved.



Idle talk

I've got an issue with my 2004 E46 330Ci that I hope you can help me with. The problem is that the idle drops 120rpm when 'Drive' or 'Reverse' are selected, resulting in what seems like the engine almost stalling on faster stops and accompanied by a very slight kick on take off. In 'Park' and 'Neutral' the idle is 740rpm but once 'Drive' is selected the idle drops to 620rpm, unless the air conditioning is on, in which case the idle remains at 740rpm.

The car has been on a diagnostic machine a couple of times with no codes showing. The Idle Control Valve has been removed and cleaned, with no change; the plugs have been changed recently along with an intake boot, fuel filter, the PCV and few other vacuum tubes. Other than the idle issue the car runs very well.

I have had suggestions that the cause of my problem may be the Vanos or the cam position

sensors but I am reluctant to just start throwing parts at the car without understanding what is going on. Any advice on this issue would be greatly appreciated.

George Dziedzic, via email

We're afraid it's very difficult to diagnose faults at a distance George and it certainly seems like you've looked in all the right areas. One thing we would say is that removing and cleaning an idle control valve doesn't always solve the problem – do you know anyone else with a similar car who could lend you a valve that's known to be working properly to try on your car?

Switching the air-con on does artificially raise the idle speed and it appears that function is working correctly. Have any of our readers experienced a similar problem to George? If so, what did you do to cure the problem?



M5 bargains

I've always wanted to own an M5 but somehow seem to miss out when it comes to actually getting my hands on one. Ten years ago I was about to buy an E39 but then I changed jobs and had an 100-mile commute and felt I couldn't justify the fuel and when I started to think about buying an E60 M5 – i.e when they were down to a price point I could afford – I was put off by the horror stories that I'd heard about their running costs.

Since then I decided to follow the values of used F10 M5s and now they've dropped to around the £30,000 mark for the cheapest cars I'd like your opinion on whether you think it will be a good secondhand buy? Or would I be better off with an E39 or an E60 at half the price. I no longer have my crazy commute and travel to work by train (not to be recommended, I might add!) so fuel costs aren't much of an issue.

Charles McClaren, via email

We reckon the current M5 is a bit of a bargain Charles... so much so that it will be the subject of our Buying Guide next month!



Is M losing its way?

Over the years I've been fortunate enough to own quite a large number of quicker BMWs, including several M Cars, ranging from an E30 325i Sport to an E92 M3 with a fair selection of just about everything in between and now I'm in the market for a new car I'm a little unsure as to what to buy. My main problem is that just about everything M now produces seems to be absolutely loaded with equipment – where are the stripped-out or even pared down models? I've been looking at an M4 and I know BMW was very pleased with itself that it weighed less than 1500kg but I'm assuming this figure is for a German-spec model that doesn't get a lot of the equipment that's standard in the UK. What

if I don't want sat Nav or heated electric seats? Why am I not catered for?

And don't get me started on the M4 GTS! It looks like BMW attached a magnet to it and drove it through a dubiously stocked car accessories warehouse! I'm sure the tech is all very impressive and it'll drive very well... blah, blah... but it doesn't really matter as it's already sold out and costs a quite frankly ludicrous £120,000!

Do you think we'll ever see a machine such as the E46 CSL again where it was a proper lightweight special and it was up to the owner to decide if he wanted to fit air-con and a radio?

Josh Grimwade, via email

You're not alone in your frustration Josh, but the bottom line is that the 'enthusiast' end of the market is a very small one – BMW will sell thousands of M3s and M4s to buyers who wouldn't consider one without all the gadgets and gizmos! Even when cars are offered in a pared-down virtual track day spec the reality is that the vast majority of those buying the cars tick all the option boxes and add the air-con, electric windows and seats et cetera.

You are right that the M4's 1497kg kerb weight is for a low-spec German version, but even in Germany some of the heaviest kit – electric seats being one of them – are standard so a UK M4 won't be that far off the 1500kg mark.

Another thing that needs to be considered is that in order for a car to get a decent Euro NCAP rating these days it needs a number of driver assistance systems and these all add weight to the car too. Chances are that plenty of buyers would be put off buying a new BMW if it only had a three-star safety rating, and that's what it would get if it didn't have systems like braking assistance and speed limit warnings – and all of these items also add weight.

As for the GTS, it does seem a bit mad that the company goes to all the expense and trouble to develop the car and then prevent people from buying it because of its low production numbers. Would it not be better to sell 2000 examples at say, £80,000, rather than 700 at £125k? Or maybe BMW thinks there aren't another 1300 BMW fans willing to part with that much money for something that looks so dubious?

As for another CSL, we reckon it's unlikely... but never say never! We think we're more likely to see a 'Competition' model than a CSL-style machine.



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BMW Buyer

Our monthly roundup of what's hot, or not, in the BMW marketplace

Words: Guy Baker

2015 has been the best year ever for BMW in terms of UK sales. And with other marques' sales starting to falter, BMW UK achieved a staggering 32 per cent increase in registrations during October – with year-to-date registrations up 11.42 per cent on the equivalent period for 2014. Its UK market share now stands at an impressive 5.8 per cent

Along with almost all other manufacturers, used BMW values, however, are starting to suffer. "With an increase in the number of wholesale vehicles in the auction halls BMW is feeling the pressure on values, as we move toward the holidays," reports Rupert Pontin, Head of Valuations at trade guru Glass's. But despite the increased supply of used BMWs some cars are still fetching good prices. "Those vehicles with an attractive specification and, in particular, white paint are still attracting the buyers," Rupert tells us. 1 and 5 Series are now proving some of the hardest models to shift at auction, with the Z4 heading the list of the least in-demand BMWs. But the 2 Series, i3 and X4 are all still being bought for strong money by dealers at auction – although the X4 is currently the slowest-selling new BMW model.



Main dealers have some attractive PCP finance deals currently on new 1 Series hatchbacks with the 118i M Sport three-door for just £249 a month, over 48 months. The interest rate is only 5.9 per cent APR and assuming you cover 10,000 miles a year – and can put down £3499 – BMW will contribute a total of

£1390 toward the cost.

Search online and you might find an even better deal. Online discounter www.broadspeed.com is offering a substantial discount of £2251 on this model at the moment – and will cut as much as £3274 off the RRP of a 120i M Sport three-door.



Forecourt find

X5 3.0d M Sport (E70) (2007 to 2010)

Previous E70 X5s are now looking pretty good value for money. But highly-spec'd pampered examples are becoming increasingly difficult to find. So cars like this Titanium silver, 58-plate, 71k-miler with just one former keeper – up for £18,250 at York-based specialist Yorkshire Vehicle Solutions – are now the exception rather than the rule.

This X5's ample spec includes black Nevada

leather, media satellite navigation, Bluetooth phone preparation, a six-disc CD changer, front and rear parking sensors, dual-zone climate control, automatic headlights and wipers, cruise control, electric front memory seats and 20-inch MV alloys. Tempted? Don't hang around, it'll soon be gone.

www.yorkshirevehiclesolutions.co.uk
Tel: 01423 331133 or 07843 281047



THIS
MONTH'S
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Z4 sDrive 23i M Sport Roadster (E89) (2009 to 2011)

Now's the ideal time to hunt for Z4 bargains, and with most Roadster buyers either after a frugal four-cylinder soft-top or a high-performance M model the six-cylinder 23i is often overlooked. And that means it's far better value, so you could be sliding behind the wheel of a one-owner Z4 sDrive 23i in tasty M Sport guise for as little as £13,000. With six cylinders the performance more than matches the looks, with a 6.6-second 0-62mph time, and the ample spec is bordering on luxurious. Nearly all have covered less than 45,000 miles and boast full BMW service histories. So what are you waiting for?



AUCTION
SPOTLIGHT

BMW Car's lowdown on the latest prices paid for average condition BMWs at auction. To find your nearest auction house check out: www.british-car-auctions.co.uk



And remember...

Always arrive early at car auctions, pick up the sales catalogue and examine the vehicles in the line-up before the bidding starts. In addition to the hammer price, you'll have to pay a small buyer's fee. You'll need to provide a deposit of at least £500 (in cash or by Maestro or Visa Delta debit card) but the balance of the purchase price and the buyer's fee can be paid via banker's draft, cash, cheque, telegraphic transfers, credit or debit card.

Prices paid last month for average condition BMWs at auction

Model	Trim/transmission	Year/registration	Mileage	Price
320td	SE Compact, manual	2002/52	120k	£1300
530d	SE Saloon, auto	2004/04	138k	£3450
118d	SE, five-door hatch, manual	2006/06	85k	£3750
320d	SE Saloon, manual	2006/06	116k	£3750
330i	SE Saloon, manual	2005/05	75k	£4200
118d	SE, five-door hatch, manual	2006/06	68k	£4500
330i	M Sport Touring, auto	2007/07	118k	£4900
530d	SE Saloon, auto	2004/04	57k	£5050
X3 2.0d	SE, manual	2006/06	69k	£5500
Z4 2.0i	Sport Roadster, manual	2008/58	24k	£7300
M3	Coupé, manual	2004/54	89k	£8800
X5 3.0d	SE, automatic	2008/58	66k	£15,000
330d	M Sport Coupé, automatic	2012/62	32k	£18,000
740d	M Sport Saloon, automatic	2011/61	64k	£20,300
640d	SE Coupé, automatic	2012/12	38k	£23,500

Prices quoted are hammer prices and will be subject to buyer's premium

Top three £15,000 diesel performance saloons

High performance comes at a price – usually a pretty steep one in terms of economy. But if you opt for one of these three performance diesel saloons, rather than a petrol four-door, then you can enjoy driving fast without worrying too much about the fuel bills.



330d M Sport Saloon (E90) (2008 to 2012)

Fifteen grand will buy you a mint-condition 2010 model with a relatively low 70,000 miles on the clock. Many pack a good deal of optional extras, with goodies like full leather upholstery and Professional sat nav and 18- or even 19-inch alloys. And despite the 245hp performance on tap, the combined fuel economy figure is still 45.6 mpg.



535d M Sport (E60) (2007 to 2010)

A 3 Series not quite big enough? Then try a 535d M Sport instead. The performance is every bit as good – in spite of the car's larger mass – and our £15,000 will stretch to a 2008 model with just 65k miles on the clock. Being an M Sport 5 Series the standard spec is plush, whilst long journeys can see you achieve over 40mpg.



Alpina D3 Bi-Turbo (E90) (2008 to 2013)

Those seeking something a bit more exclusive should hunt out the rare Alpina D3 B-Turbo Saloon. A 2011 model is within range, with a typical 75,000 miles and a full BMW Alpina history. All cars are very well appointed and the twin-turbo diesel delivers potent acceleration (0-62mph in just 7.2 seconds), 50.4mpg economy and just 159g/km of CO₂.

Many thanks to John Warren Cars (www.independentbmw.co.uk) for its assistance with BMW Buyer

FROM THE ARCHIVE...

Another selection of back issues showing what we were up to five, ten and 15 years ago



February 2011

There was a feeling of dread hanging over the office when the realisation dawned on us that our milestone 200th issue was going to be the February one. While we've nothing against February *per se* it's the one issue of the year where we have very little time to assemble an issue as both our office and our printers shut down over the Christmas period... which is the time of the month when we'd normally be going to press.

Not wanting to make life easy for ourselves we decided to include a 32-page supplement with the issue on the history of BMW road cars... it nearly broke us but through the application of

industrial quantities of caffeine, sleepless nights in the office and shifting time to force an extra couple of hours into each day we did finally manage to put the issue to bed. And then we had a very long sleep. Or just long enough to gather together four generations of M3 together for the magazine's cover feature which was also celebrating 25 years of the M3. Doesn't seem possible it was five years ago!



February 2006

Plenty of M Power cars to drool over in this issue, and the one that there really was no escaping from was the AC Schnitzer Tension, an orange and black missile that graced our cover. Like most of the company's wilder creations this was a show car designed to grab headlines but it also made very effective use of its technology and was used by Schnitzer for a high speed run from the top of Germany to the bottom – 1067km at an average speed of 204km/h (126mph) – impressive given the drivers adhered to all speed limits on non-restricted sections of motorway. It also clocked a mightily impressive

331.78km/h (a smidgen over 206mph) at the Nardo test track in Italy!

If tuned V10s were your bag then you'd also have been interested in DMS's tweaked E60 M5 that hooligan Holtam put through its paces at Bruntingthorpe's test track. It cracked 0-62mph in 4.3 seconds, hit 100mph from a standstill in 9.89 seconds and hit a GPS verified 180+mph before it ran out of runway. Given a longer stretch of Tarmac we reckoned it should easily crack the 200mph barrier.



February 2001

The February issue of the magazine often coincides with the Detroit motor show where BMW has released some pretty tasty machinery over the years and 2001 saw the launch of the X coupé, a concept that showed the possible direction of future BMW styling.

It was certainly unusual, featuring the running gear from a 3.0-litre diesel X5 to create what was probably the world's first 4x4 diesel coupé. It was also the first BMW where designer Chris Bangle used his 'flame surfacing' design language which apparently gave the "body surfaces the freedom to turn in on themselves, lending a high degree of tension to the

design." No, we didn't know what he was on about either!

It wasn't all about the X coupé, though, as we also had a brace of features about BMWs with capacity increases. First up was the Racing Dynamics R50 Tornado – an E46 packing an M5's V8 *à la* Hartge H50 and we also tested a Hartge E36 M3 that had its capacity increased to 3.5-litres. That latter machine was hugely impressive.

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More automatic gearbox woes

We touched on problems with the six-speed ZF automatic recently, and found a place that repairs and reconditions the expensive mechatronics unit. Well now we've found a specialist in Manchester who can sort out what could have been a frighteningly expensive gearbox issue for just a few hundred pounds.

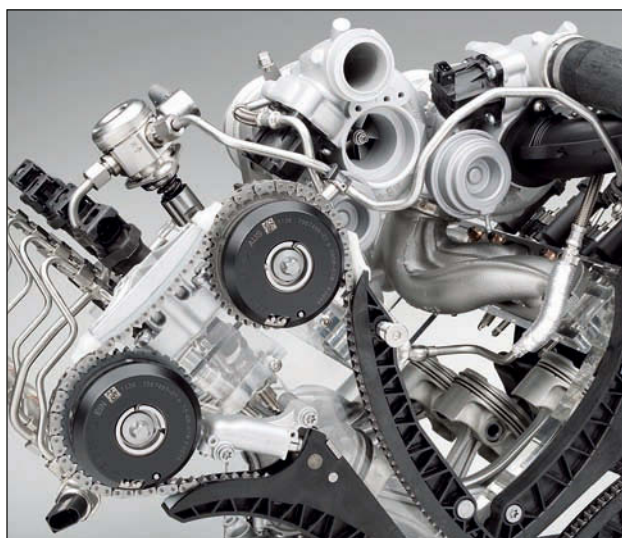
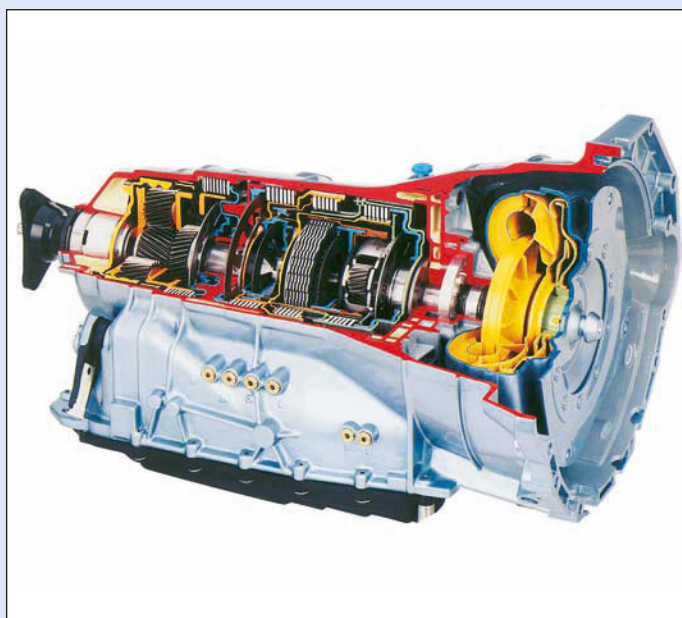
The Mechatronics unit has a bridge seal where it fits up to the main gearbox, and if this fails it results in lots of faults (not engaging gear, rough shifting and the dreaded limp home mode).

We heard of a buyer of an E65 with such a problem recently. It had been bought cheaply with this issue and the owner was no doubt quoted the usual £2500 to remove and rebuild the 'box. Then Tameside Transmissions in Manchester (0161 371 8885) were approached to repair the car after having two substantial four figure quotes. The bridge seal (BMW part number 24 34 7 588 759) is an increasingly common

problem and with the sump removed, the mechatronics unit was unbolted and dropped down whereupon the faulty seal was discovered. With a new one fitted, the sump bolted back up and the oil level topped up and the gearbox worked perfectly. The bill was about two or three hundred quid.

The moral of the story is: when it comes to stuff like this, don't just assume the worst but get advice from two or three specialists. To be honest, a good home mechanic could fix this in three hours at a cost of just a few quid for the part, but you need to wear an earth strap from yourself to the car body as static can damage the ECU.

There is often a cheap fix to the most daunting faults. I once bought cheap but very clean E36 328iA for peanuts with a 'knackered gearbox' that went into limp home mode after two miles. One new camshaft sensor later and the fault code cleared and it was just fine...



Timing chains... again

The latest timing chain 'quality enhancement' package (a recall that isn't) is on the rare N63 V8 engines, which are far more common in the USA than here. In fact, the action doesn't appear to have happened in the UK yet despite appearing in the US almost a year ago but that's not to say the problem doesn't exist. The service bulletin is number B001314 and like the N42 2.0-litre diesels, it's about measuring chain stretch and deciding whether to remove the engine and replace everything. As well as the chain, the bulletin also mentions checking and, if required, replacing other parts – injectors, MAFs, crankcase vent pipes, brake vacuum pump and the low pressure fuel sensor. Apparently there is 38 hours of work involved so it's a major issue. We're guessing that the other parts have been causing trouble as well so BMW just wants to replace the lot.

On this engine the chains are at the front of the unit and it's a simple enough design with one chain per bank running from the crank sprocket. But the chain casing is sandwiched between the heads and the sump so one or other must be removed. The 38-hour time suggests the engine and gearbox have to come out and both heads and sump removed. In the US the oil change interval seems to have been dropped down to 10,000 miles. Timing chains have a hard life and extended oil changes as well as auto stop/start really do them no favours. Cars affected are V8 petrol engine variants of the F10 and F11 5 Series plus the 5 GT, the F01 7 Series, X5, X6 and 6 Series. BMW UK has not issued any kind of technical bulletin but it's worth bearing in mind if the EML light comes on and you notice the car is not running as it should.

F11 rear air springs

In 2015, after making 5 Series Tourings with rear air suspension for close to 20 years, you would think the airbags are now just about bulletproof. Well, I'm afraid they're not.

A reader contacted us recently with a tale of woe with his F11 (current model) 5 Series Touring. An air spring popped on his car (a 520d) and while a new one from BMW is an expensive but not completely scandalous £303 plus VAT (£363), it cannot (at the time of writing) supply one. There was talk of a back order running into thousands of units – strange when the car is still in full production – but we are talking weeks if not months before one can be supplied. We advised the owner to contact Euro Car Parts or Schmiedmann

for an aftermarket unit. Euro Car Parts sell an air spring made by Arnott Air Suspension who has a very good reputation. The price? £236 all in with VAT which is more reasonable, especially as you can actually buy one and fix your car. Over in the US, Suncore Industries supply F11 air springs and their cost is \$349 each or \$695 the pair.

It's clearly been a problem for BMW, and whilst we don't know what is causing the trouble, it is not very good that cars as young as the F11 are having these troubles when General Motors can make air springs for cars like the Escalade that seem a lot more robust, and that even BL stuff like the Maxi still have working suspension displacers after 40 years of use.



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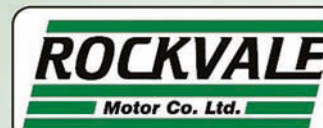
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Word from the dealers

I was speaking to a contact at a branch of a well known BMW dealer chain down south about what is selling and what isn't. The 1 Series is doing very well, of course, and so is the 3 Series with the new three-cylinder versions being in much demand. But some aren't faring so well it seems. Real interest in the 2 Series Tourer hasn't materialised so far (I have only seen two on the road since the launch) with some buyers thinking the vastly cheaper and almost identical looking Kia Carens with its massive warranty is a better bet. Perhaps they've gone one niche too far and that folk wanting a stylish, well made MPV that drives well just don't need the BMW badge and certainly not for four or five thousand pounds extra. As such, discounts and deals are there to be had. There's no discount on the new X3 as it has proved such



a hit that BMW cannot build enough but my contact wonders how the new X1 will fare. It's a very good car of course (I like it a lot) and much prettier than the original but eyebrows were raised when the price list came through: the basic two-wheel drive 1.8d weighs in at just short of a staggering £27,000 without options and there will be no discounts

for a while. You may not think £27,000 is expensive but when you consider that the new Nissan Qashqai diesel is a shade under £22,000, you must need the blue and white badge very badly. We'll see how that one goes. It may well be that BMW don't have the capacity to turn out Qashqai like numbers so it may as well ramp the price up.

The 5 Series is doing very well still (deservedly so – it's fantastic, even if it is due to be replaced this year) but the 6 Series is struggling. Right now there are £365 a month corporate leasing deals on the lovely Gran Coupé to get them moving and should you want to buy one, discounts in the region of ten per cent are the norm.

New 118i offers

I just took a call from Andy Paton at Sytner Sheffield (0114 275 5077) who tells me that it has a deal going on the new three-cylinder turbo 118i Sport. The current 1 Series with the new engine and restyled front and rear ends is a nice car anyway – as well as 136hp from the 1.5-litre unit and the potential for a real world 40mpg you get DAB, sat nav, and 17-inch alloys.

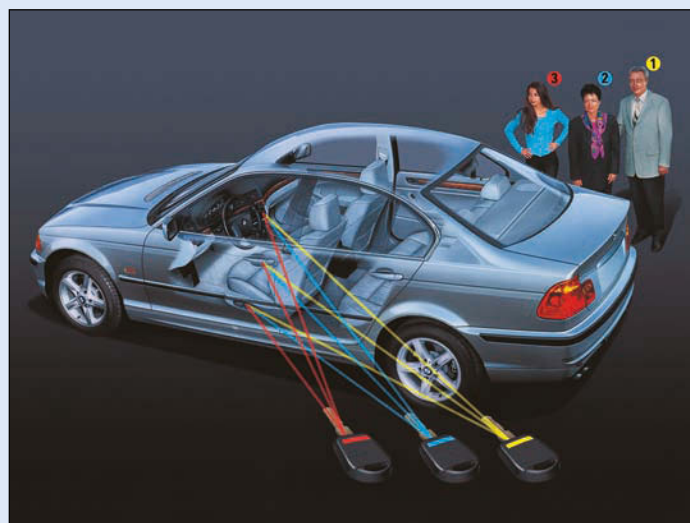
The startling thing, though, is how attainable these cars are. After a deposit of just £279 and then £279 a month and you're away. It shows how serious BMW is about shifting volume.

There are provisos of course. After four years you don't actually own it as it's on a PCP deal. So that means £3348 a year or £13,392 over the full four

years and you're restricted to 8000 miles a year with a 7p per mile penalty if you go over this (as you're almost certain to). But do the maths and 3000 miles per year over is still only £210 per annum so it's not the end of the world.

The 114i has now been dropped and with it the spectre of the original 116i that would struggle to shift its own weight. With it go comparisons with the lower-powered Astras and Golfs and now the bottom of the rung BMW deserves serious consideration.

Is it a better bet than a Focus though? These days, £219/£219 deals are available on a Focus Zetec, another well built, well equipped car with serious credentials... there has never been a better time to buy a new car.



E36 and Z3 steering locks

When the E36 was given the EWS 'microchipped key' in late 1994 (M registration) it seemed like a good idea. In terms of making your car secure it is, because without the correct key with the microchip inside it's not going to start, end of story. The chip itself is tiny – around a third of the size of your smallest fingernail and, via the coil windings inside that plastic ring around the lock barrel, it communicates via a fag packet-sized EWS box under the dash that gives the ECU the all clear to go. The lock barrel was also made secure – try and turn it with a big screwdriver and a plastic tang inside will snap off resulting in the key and lock barrel just spinning uselessly. As time has passed, that plastic tang is wearing out and many E36 owners have found that

the key is starting to spin on its own. Getting the barrel out to fit a new one is expensive and tricky (some are permanently locked in with a steel pin), whilst complete new lock assemblies are on worldwide back order.

Good used ones are therefore the answer, but they're not that easy to come by. They are also a pain to replace due to the two shear bolts and, no, the stronger, pre-1/95 type lock will not fit because the steering column tube is a different diameter. When fitting a used one, you can either fit two new shear bolts or for a pair of short allen bolts – BMW part number 07119906045 is perfect. You will also need to open up the replacement key and swap over the EWS coding chip.

Next Month

Epic Alpine drive in an E34 M5 Touring

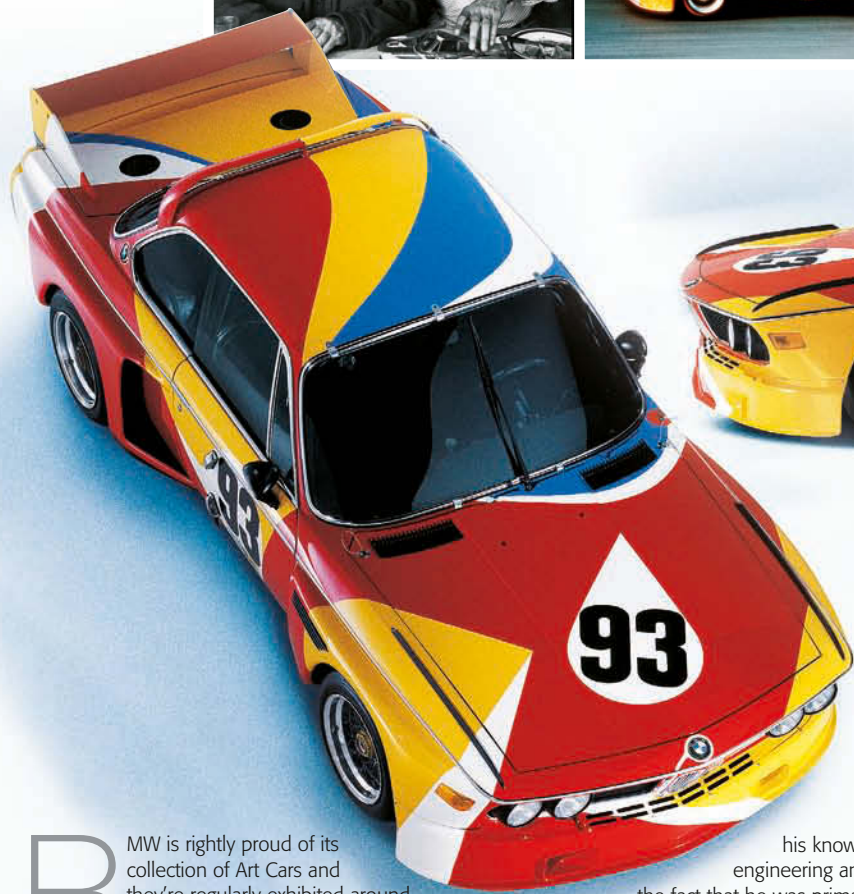
March 2016 issue available to download
15 February and in the shops 18 February.

(Contents subject to change)

BMW Art Cars

Alexander Calder: 3.0 CSL

In the first of a new series looking at BMW's Art Cars we delve back in the history books to unearth the story behind the first such machine...



BMW is rightly proud of its collection of Art Cars and they're regularly exhibited around the world in art galleries, but while it is happy to take the plaudits for the range of artists it's commissioned over the years the first Art Car wasn't actually a BMW creation after all.

The car you see here was actually commissioned by a wealthy French art dealer and part-time racing driver, Herve Poulain, after he purchased a Group 2 racing CSL from BMW Motorsport to compete at Le Mans. He then persuaded his friend, sculptor Alexander Calder, to paint the car in order for it to be a moving work of art at the 1975 24-Hour race.

Born in 1898 in Philadelphia, the legendary artist Alexander Calder began his career as an engineer, but art soon won out over engineering and he developed a unique style of sculpture. His often large-scale pieces had a buoyant appeal and were often painted in cheery primary colours. His forte was creating mobile sculptures, combining Calder's love of art with

his knowledge of engineering and, despite the fact that he was primarily a sculptor, Poulain commissioned him to paint the CSL that he was to race at Le Mans.

It wasn't Calder's first foray into painting a machine; in 1973 he painted a passenger jet owned by Braniff South American Airlines and from the experience garnered from this exercise Calder felt he was able to put his own stamp on the CSL. Instead of trying to work with the shape of the car, Calder subjected it to his bold use of colour – bright red, blue and yellow – that didn't attempt to use the car's streamlining or overall shape to constrain his view of how it should look. He created a bold design that looks stunning.

The fact that the car has the mechanical backing and aerodynamic addenda to carry off the colour scheme was the icing on the cake. Under the bonnet was a 3210cc version of the legendary 'six, it boasted twin overhead cams and four-valves per cylinder and was rated at around 480hp with a

top speed, according to BMW, of 180mph.

Poulain entered the car under his own name and employed the services of well-known endurance racers Sam Posey and Jean Guiche. Perhaps thanks to the depleted field at Le Mans the car qualified well, taking pole position for its class and tenth spot overall on the grid. Strictly speaking the class win should have been a formality for the Calder CSL as its main competition came from another CSL, a brace of Ford Capri 2600s and a Heidegger 2002. However, when it comes to endurance racing there are no such things as certainties. Initially the car ran well and was in fifth position overall but sadly suffered a driveshaft failure after seven hours and was forced to retire leaving the Heidegger 2002 to take the Group 2 class win.

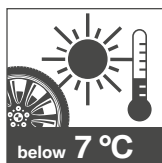
Despite the car showing promise at Le Mans it never raced again as BMW purchased the car from Poulain and it became the first machine in its Art Car collection. It wasn't the end for Poulain though, but we'll come onto that when we look at some of the other Art Cars that followed in the ensuing years... ●



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